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THE

# MEDICAL JOURNAL OF AUSTRALIA

(With which "The Australasian Medical Gazette," and "The Australian Medical Journal" are incorporated.)

The Journal of the Australian Branches of the British Medical Association.

VOL. II.—4TH YEAR—No. 4.

SYDNEY: SATURDAY, JULY 28, 1917.

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# THE MEDICAL JOURNAL OF AUSTRALIA.

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No. 4.

## THIRTY-THREE CASES OF APPENDICITIS IN CHILDREN.<sup>1</sup>

By W. Atkinson Wood, M.D., M.S., D.P.H.,  
Honorary Surgeon, Children's Hospital, Melbourne.

I have preserved the appendices from the last thirty-three cases of appendicitis upon which I have operated, with the hope that by comparing the clinical history with the pathological finding a correlation might be found between them.

I have also examined a number of appendices from the post-mortem room, with the object of determining the permeability of the appendix to faeces and their comparative lengths and to note any abnormalities.

As the appendix is, from a developmental point of view, undergoing atrophy, we would expect to find the length less in adults than in children. In this series the longest appendix was 10 centimetres in a child of 4½ years and the shortest 3 centimetres in an adult of 58 years.

In 65 cases of children the average length was: Under 5 years, 7.3 centimetres; 5 to 10 years, 7 centimetres; 10 to 14 years, 7.1 centimetres. Most of these had been in 2% formalin for several days. Such small figures do not tell us anything, but may be the beginning of further observations.

Long appendices, which have, as a rule, narrower lumina than short ones, should be more liable to obstruction and kinks. If children have longer appendices than adults, we would expect a greater incidence of appendicitis in children.

The proportion of appendiceal operations to in-patients during 1916 at the Children's Hospital was 1 in 36.

The same proportion at the Melbourne Hospital was 1 in 19, suggesting that appendicitis is more common after 14 years (the oldest children treated at our hospital) than before.

The youngest child in this series was one of 18 months, who had a densely adherent appendix in a hernial sac, and both were removed. There had been a very early appendicitis to cause this condition and to anchor the appendix to the peritoneum when still high up in the abdomen.

Fifteen males and eighteen females were treated.

**Concretions.**—In the 33 cases there were 11 with concretions; three of these were recurrent cases and the rest were first attacks.

The formation of a concretion can be followed by comparing many appendices; some contain fluid faeces, others plastic or hardened throughout or in patches. In two cases a pencil of hard faeces filled the lumen throughout its length.

In others there was a hard nucleus with plastic faeces adherent to it. This nucleus shows well in a

post-mortem radiogram, but the plastic covering does not.

The outer coating in turn hardens, and as the concretion enlarges, it presses on the mucous membrane and causes it to atrophy. Later the appendiceal wall is stretched and a bed is formed for the concretion, and complete obstruction ensues. Microscopically this bed shows small round inflammatory cells, which take the place of the mucous lining; the thickness of this layer gives a clue to the age of the concretion. Concretions themselves show microscopically masses of small nucleated cells on the surface, which are degenerated intestinal epithelium, also some *bacilli coli communis* and some lymphoid cells. On section we see an irregular framework staining with hæmatoxylin, enclosing a granular or sometimes an indefinitely cellular mass, which stains feebly or not at all. I saw no muscle or vegetable cells, fat or crystals which would suggest faeces.

X-ray photographs of excised appendices showed contained concretions well, and it is possible that some of them could be thus shown during life.

All three cases of general peritonitis had concretions, and out of eight abscess cases seven had concretions, which suggests that they are particularly liable to produce pus.

In six out of the eleven cases of concretion there was an acute onset, with vomiting and severe abdominal pain, which was at McBurney's point from the beginning. These were all operated upon within 48 hours; but in three perforation had already occurred. In one case the appendix had become adherent to the caecum, which had been penetrated by the perforation and the concretion had fallen through, leaving its bed behind in the appendix.

In the cases of concretion with a longer history, one patient had had a tenderness over McBurney's point for three months, and another had had dyspeptic symptoms and tenderness on deep pressure at McBurney's point and over the gall bladder for 18 months. In the latter nothing abnormal was detected on direct palpation. The patient was an adult, and all symptoms have disappeared since removal. I think that well-marked concretions could be bimanually palpated by the rectum in children, although I have not done so as yet.

There is no doubt that concretions can exist for long periods without causing symptoms, for in two of the acute cases the bed was well marked with chronic pathological conditions, and in another a thrush fungus was growing in its substance. As pathologists do not seem to find them frequently in the post-mortem room without having produced symptoms, we may conclude that if they exist, they will probably set up an acute inflammation sooner or later.

In nearly all the cases of appendicitis obstruction to the lumen can be demonstrated, either by con-

<sup>1</sup> Read at a Meeting of the Victorian Branch of the British Medical Association on June 6, 1917.



cretions, stagnant faeces, actual hæmorrhages, old or recent, or swollen mucous membrane.

The slightest amount of inflammation set up in such a badly drained corner will cause the mucous lining to swell and block the lumen; the intra-appendicular pressure then rises, and it then depends on the quality of infection and the character of the obstruction whether acute inflammation with pus formation and retention ensues or the pressure is sufficient to overcome the obstruction, in which case the products are released and relief ensues for the time being, producing so-called appendicular colic.

The muscular strength of the wall of the appendix will definitely influence the result. Although a rising temperature and pulse will emphasize danger, one cannot as a rule place much reliance on these symptoms.

In the early stages the inflammation is so localized that it would not affect the temperature any more than a small boil in any other part would.

In virulent infections perforation may ensue in a few hours before the local condition has had time to become general and affect the temperature to any extent. In two cases there was a gangrenous appendix and perforation within 48 hours, with a temperature of 37.8° C. (100° F.). In another case general peritonitis following perforation developed within 36 hours, with a similar type of temperature, and we all know of those deceptive cases of sudden relief from intense pain when the patient seems quite well and has a normal temperature, but in reality he has a perforation.

In one of these cases the following history was elicited: A boy, aged 4 years, suddenly began to scream and vomit, and had violent abdominal pain. As he had been eating green fruit an enema was given; scybala returned, and in a few hours he was easier. Within 12 hours, however, he was again vomiting and crying with abdominal pain, and was very tender all over the abdomen, which was distended and not moving. I operated at once, and he was crying out with pain as he took the anæsthetic. The appendix was very long (10 centimetres), and was coiled on itself in three turns, like a coil of rope, and irregularly distended with bubbles of air, which could be felt crackling under the fingers. Directly after excision it straightened itself out. The mucous membrane of the appendix was swollen and congested, and microscopically a profuse growth of the colon bacilli was seen.

This was an old-fashioned child's stomach-ache, for which many mothers would give a dose of castor oil; but it had a history indistinguishable from a perforation.

A recurring "bilious attack" is often appendical. A boy of 14 years had for several years been subject to these attacks with vomiting. When I saw him he had had a sudden epigastric pain, with vomiting, after eating green mulberries the day before. The temperature ranged between 37.8° and 38.3° C. (100° and 101° F.) for several days, and the pain gradually got lower down, and four days later it settled definitely at McBurney's point. The whole attack lasted two weeks and gradually subsided.

The stools were offensive, light in colour and irregular in consistency.

As the parents said it was one of his usual attacks, they refused operation at the time, but later on asked me to remove the appendix, which I found to be bound down with old adhesions, kinked and the mucous membrane congested with several large petechial patches.

This is a type of case in which a preliminary enteritis later on sets up an appendicitis. There have been five such cases in this series, taking four to seven days to settle in the appendix, which is the most vulnerable point in the intestinal canal. They all occurred in boys between nine and fourteen years, and followed some indiscretion in diet.

Another boy was attacked suddenly with acute abdominal pain and vomiting, with a normal temperature and a pulse-rate of 96. Operation 24 hours after the onset revealed an adherent appendix, swollen and hard, dark purple in colour, with a small slough on the outer surface, and internally the mucous membrane was one black slough. He had been very subject to "bilious attacks," and commonly returned from school vomiting on a hot day.

In most of the cases beginning high up as a gastro-enteritis, there is an early vomiting, which passes off as the trouble gets further down; but in cases which begin as a colitis, vomiting is often absent.

Thus in one case there were scybala with blood and slime, revealed by an enema. Twenty-four hours later there was tenderness over McBurney's point, but no vomiting. The appendix was adherent, inflamed, friable and constricted by a sharp kink. The patient had had four similar attacks.

We find vomiting in any severe irritation of the small intestine, such as intussusception or strangulated hernia, but not so commonly in irritation of the large intestine. As the appendix is small and is situated half way we can understand that vomiting is not always present.

In 20 cases out of the 30 there was vomiting or nausea; although it is one of the commonest symptoms we cannot depend upon it. In three abscess cases there was no vomiting. Thus a child of seven years had acute abdominal pain 24 hours before operation. Eight hours afterwards the pain subsided, and he went to a picture theatre, but the pain returned nine hours later, with local tenderness, but no rigidity. He had a leucocyte count of 40,000. There was a concretion and perforation. He had no vomiting. The temperature was 37.8° C. (100° F.), and pulse-rate 108. In many of the recurrent and milder cases there is no vomiting.

Although some cases of appendicitis follow on an enteritis or a colitis, many begin and end locally in the appendix, which is tender from the beginning.

A young man suddenly developed an intense central abdominal pain, with vomiting, which caused him to writhe and cry out. Morphine was given, and an enema showed some undigested food. Two hours later all pain had gone, except a tender appendix, which took several days to subside.

This acute abdominal pain, Kelly tells us, is due to traction on the attachment of the bowel.



It is an acute indigestion with disturbance of the bacterial content of the bowel, causing a temporary obstruction of the appendix, with local tenderness.

The condition of the bowels in 13 cases was costive before the attack; in four there was some diarrhoea, and in four scybala, with slimy or blood-stained stools, are recorded.

Some obstruction to the lumen of the appendix combined with an unhealthy condition of the bowel contents is sufficient to account for most of the cases of appendicitis.

Many of the obstructive conditions in this series were due to a prior unhealthy condition of the bowel contents.

Thus there were in eleven cases concretions and in two hardened faeces blocked the lumen and had probably been there for some time. In many the mucous membrane was much swollen with ecchymosed patches, and in two free blood was in the lumen.

In two cases the appendix was distended with a liquid which was half faeces and half pus, and in several of the recurrent cases the appendix was so tied down by adhesions that obstruction was complete.

In one appendix removed a month after an appendicular abscess had been opened, there was a pear-shaped swelling at the end, which contained a clear, colourless fluid, surrounded by a smooth cyst wall, which on microscopical examination showed a mass of small nucleated cells, like the wall surrounding a concretion. The cyst was entirely shut off from the lumen of the appendix, and probably contained a concretion at the time of the abscess.

In eleven cases there had been previous attacks. Of these, two appendices were filled with plastic faeces, two with hardened faeces like a pencil, three had concretions, two were constricted by fibrous contraction, one contained free blood and was constricted by swollen mucous membrane, and one contained 25 thread worms, with swollen and ecchymosed mucous membrane.

In two of these recurrent cases with local pains and tenderness, but no vomiting or constipation, there was complete blocking, in one instance caused by hardened faeces which not only filled but distended and thinned the walls. In the other the appendix was of the atrophic type, with thickened walls and a very little lumen, which was almost filled with glistening white, heaped-up scales of dryish mucous membrane.

There was very little appendicular muscular power in both of these cases, in one as a result of stretching and in the other of degeneration.

The ultimate history of these cases depends upon the permeability of the appendix.

The locality of the onset of the pain is deceptive, ranging in these cases from the tip of the ear to McBurney's point, including the chest or any part of the abdomen.

In children a pleuro-pneumonia may easily be confused with an appendicitis in the early stages. Within 24 hours, however, the pain usually settles down to its real home.

Tenderness at McBurney's point affords the most useful sign of all for diagnostic purposes.

In one case the original pain was at McBurney's point, running through to the back. In that appendix were found several concretions containing a fungus growth; near the base of the appendix on the caecum was a round, indurated, dull red patch, the size of a shilling. These patches sometimes form ulcers, and are secondary infections from the appendix.

In the early stages the leucocyte count has been of service in suggesting the presence of pus. Thus the blood of a patient recovering from a second attack, with very distended vessels outside and inside the appendix, gave a leucocyte count of 11,000, while in a perforation case, with half an ounce of pus behind the caecum, the leucocytes numbered 23,000. A count of 12,000 was obtained in association with an appendix containing a concretion and thread worms, with a history of 24 hours' illness, while in another case complicated by a perforation at the time of admission and general peritonitis, the count was 40,000.

In the later stages, however, there may be pus, with a comparatively low count. Thus in a case eight days old with a walled-in abscess, the count was only 22,000, while the count in a case with a swollen appendix containing extravasated blood, but no pus, was 20,000—quite a small difference.

One does not always get rigidity or immobility, even in purulent cases. A flaccid abdomen in severe abdominal war wounds is looked upon as a bad sign.

Recovery from appendicular colic means that the intra-appendicular pressure controlled by the muscular coat of the appendix has been sufficient to force the contents past the obstruction into the caecum, thus providing drainage and averting danger for the time being. After repeated or continuous distension the walls become thin and weak and unable to evacuate the contents, so that the slightest obstruction will dam the contents back and inflammation will ensue. Recurrent attacks are thus liable to become more severe.

Can an appendicitis be a symptom of a general infection? I once operated upon a patient suffering from typhoid fever in an early stage, believing it to be purely appendicular. The appendix was inflamed, but so was the ileum and caecum, and the glands were much enlarged. I removed the appendix and the patient, after a three weeks' illness, did well.

The following case is suggestive that the appendicular trouble was due to tonsillar infection. A child, aged 10 years, three days previously to operation, had an acute tonsillitis. Next day, in addition, she had intermittent pain in the abdomen with vomiting. This continued till admission, when her throat was still inflamed. She was always costive. She had tenderness over McBurney's point, and a rigid right rectus. The temperature was 38.3° C. (101° F.); and the leucocyte count 27,000. The appendix was very swollen and inflamed, kinked sharply on itself, owing to the swelling making the mesentery too short. Internally the lumen was filled with fresh blood clot, and flakes of lymph were on the adjacent intestine. The caecum was congested and firm in consistence. The throat swab showed diplococci, and a smear

from the appendicular mucous membrane showed a few cocci (as a rule in acute cases the colon bacillus shows a profuse growth). A blood culture taken by Dr. Webster after the operation, and when the temperature had fallen, was, however, negative; possibly it was too late.

The treatment adopted has been to operate as soon as the condition is diagnosed, and, with the exception of one patient admitted with general peritonitis, who eventually died, all the patients have done well.

A few cases have given trouble with regard to diagnosis.

One patient, with a history of three days' feverishness, with constant vomiting and slight tenderness in the lower abdomen was prepared for operation. He had a leucocyte count of 6,900 and was in a peculiarly somnolent condition. As he had a high degree of acetonuria we gave him large doses of alkali and waited. The urine became alkaline in a couple of days, and he was quite well.

One can get intense abdominal pain and tenderness, with vomiting, from the passage of scybala without inflammation. An enema will relieve the condition.

One case simulated cerebro-spinal meningitis. The patient had been ill for three weeks, and was getting worse, with pain in the lumbar region, neck and limbs. The back was stiff, and Kernig's sign was marked, but Babinski's was negative. Lumbar puncture yielded a normal fluid. The leucocyte count was 12,000. As she had some tenderness and rigidity in the appendiceal region I operated, and found that externally the appendix was normal, but internally it contained 25 thread worms, lying on a very defined, congested patch of swollen mucous membrane.

Four cases had thread worms in the appendix, and they no doubt are capable of irritating the mucous membrane and making it swell sufficiently to produce obstruction, even if they do not give rise to a specific poison.

There were four cases of general peritonitis. Three patients were admitted with it. In one case an unexpected teaspoonful of pus escaped from an adherent appendix, and although a thorough dry toilet was carried out, general peritonitis ensued; the patient eventually recovered.

One patient, after enduring a subphrenic abscess and double empyema, succumbed. The others did well with Murphy's treatment of Fowler's position, median pelvic drainage, keeping the stomach and intestines quiet, and plenty of saline solution.

I examined all the appendices removed, and found a profuse colon bacillus growth in nearly all of the acute cases, whether they had proceeded to the pus stage or not.

In the interval cases, thread-worm cases, and in the normal appendices removed in the post-mortem room, there was only a scanty colon bacillus growth.

When pus had formed inside the appendix, there was often no mucous lining, but only a smooth, fibrous surface, from which it was impossible to get a smear.

Most of the children's appendices show a delta-shaped entrance to the caecum, which is closed by a valve of mucous membrane.

Just over half the 35 appendices removed from the post-mortem room at the Children's Hospital contained faeces, and the rest were collapsed and empty.

There are two cases from the post-mortem room of obliteration (1) by fibro-fatty filling-up of the lumen from an adult, and (2) one from a child with an adenoma obliterating a part of the lumen. There are also two cases of atrophy: (1) From an adult with typical club-shaped extremity with the lumen completely obliterated by fibrous tissue, and (2) from a young child with general atrophy or perhaps want of development in whom the appendix is very small and the lumen the size of the shaft of a small pin. As these four cases were found in the examination of 60 specimens, we may conclude that the condition is fairly common.

I also show 36 specimens of appendices removed for pathological conditions during life, each with its history attached, out of which I have culled about a dozen of special interest.

#### EXPERIENCES IN THREE HUNDRED CASES OF PARITURITION TREATED BY SCOPOLAMINE MORPHINE INJECTION.<sup>1</sup>

By E. B. Heffernan, M.B., B.S. (Melb.),  
Melbourne.

The fact that authorities differ so widely in their experience with this method of anaesthesia during labour shows that the personal judgement of the obstetrician is an important factor in successful treatment. Patients also vary so enormously in their response to the drugs in question that each one must be treated individually, and no hard-and-fast rules as regards dosage, etc., can be adhered to. Taking the 300 women in whom I have used morphine and scopolamine, roughly speaking, about 3% were quite unaffected, in about 10% amnesia was partial only, while in the remainder, total amnesia was produced.

I began using morphine and scopolamine about five years ago, in a Gippsland township, and the results were so pleasing, both to my patients and myself, that I have continued its use ever since. I was fortunate in having a private hospital in the town, where I could make my earlier observations with accuracy.

On the whole, the results I obtained in the country were even more satisfactory than those obtained in Melbourne. My country patients responded in a remarkable manner, even to one injection of morphine and scopolamine, and seldom required more than the first injection. City women on the other hand, frequently require the help of a little chloroform to get them under the influence of the first dose, and practically always need further doses. I can offer no explanation for this difference, as I work under exactly the same conditions, having the

<sup>1</sup> Read at a Meeting of the Victorian Branch of the British Medical Association on June 6, 1917.



same nurse in charge of a private hospital. The only observation I can make is that while my country patients were overworked farmers' wives, physically exhausted, my city patients have probably had no physical strain, and are merely more active mentally.

I consider that proper working conditions are absolutely essential to success in the production of amnesia by this method. In the first place, all my patients are treated in a private hospital in charge of a thoroughly competent nurse, who has with me had five years' experience in this work. In the second place, I use only a combination of morphine hydrobromide, 0.01 gm. (gr.  $\frac{1}{6}$ ), and scopolamine hydrobromide 0.0009 gm. (gr.  $\frac{1}{150}$ ) for the first injection, followed by scopolamine 0.0006 gm. (gr.  $\frac{1}{100}$ ), alone for further injections. I think the use of hyoscine instead of scopolamine has led many obstetricians to condemn this method of anaesthesia.

Although these two drugs are chemically identical, they differ very much in their therapeutic action. The only physical difference between them is their action on polarized light, hyoscine being optically inactive, while scopolamine is laevo-rotatory.

With regard to the time at which the first injection is given, in a primipara I am guided chiefly by the patient's ability to bear pain. As soon as the pains become unbearable morphine and scopolamine are given, regardless of the stage of dilatation reached. In a multipara morphine and scopolamine are given on admission, if the patient is in labour, as in these cases the earlier the injection is given the better. If the patients do not seem to respond to the drug, a few whiffs of chloroform generally help its action. The room is then darkened, and the patient kept as quiet as possible. A second injection of scopolamine alone is given an hour later. In many cases these two injections are sufficient. The need for further doses is determined by the depth of the patient's sleep between the pains. Some women complain bitterly during a pain, and even ask for chloroform, but between the pains are snoring, and afterwards have no recollection of pain.

Others are restless during the pains, and some even get out of bed, and perhaps sit on a chair beside the bed; but I have met with only three cases of extreme restlessness, and in these I think my dosage was at fault; although amnesia was complete in all three and there were no after-effects of any kind.

As long as the patient is slowly aroused by an oncoming pain there is no need for more scopolamine, but as soon as she is quickly aroused at the beginning of a pain, a further dose is required. The memory test is rather clumsy, and is, in my opinion, quite unnecessary.

Patients always complain of thirst when awakened by pains, and usually drink large quantities of water during labour.

Chloroform is given in the second stage, very little being required to keep the patient sufficiently anaesthetized.

After the completion of the third stage, an injection of aseptic ergot or ernutin is given. The

patient is then again kept quiet in a darkened room, and generally sleeps from 2½ to 3 hours, waking up perfectly fresh, and very much surprised to find her baby has arrived.

Having read of alarming hæmorrhages and asphyxiated babies following the use of morphine and scopolamine, I have always been thoroughly prepared to meet either emergency, but so far have been extremely lucky in regard to both. I have not noticed any particular tendency to hæmorrhage in these cases. The babies are sometimes slow in crying, but need no treatment beyond the ordinary smacking. In the few cases in which the babies have been born blue, there have always been other circumstances which could have accounted for the asphyxia.

The advantages of the use of morphine and scopolamine from the patient's standpoint are:—

- (1) Relief of apprehensive feelings.
- (2) Relief of pain.
- (3) Loss of memory of hours and hours of misery.
- (4) Removal of that dread of labour which makes a woman's pregnancy even a greater burden.

From the obstetrician's viewpoint, its chief recommendation is the complete absence of shock and exhaustion, even after a long and difficult labour.

Against this it has been stated that labour is prolonged, the tendency to hæmorrhage increased, and the risks to the child are greater. I have already dealt with post-partum hæmorrhage and blue babies, but as regards the prolongation of labour my experience has been rather the reverse. I have found that the first stage is usually accelerated, probably by the relief of spasm. The pains also are affected, being lessened in frequency, but increased in force. During the second stage there is occasionally a tendency to inertia, but this is readily overcome by the use of pituitary extract. I have used these drugs in all cases, normal and abnormal, and so far have met with no contra-indications to their use, except an incompetent nurse. This has been my main objection to its use in private houses, as most nurses have ideas of their own on midwifery, and cannot modify them to suit different obstetricians.

Undoubtedly the strain of civilization has fallen very heavily upon women, and they are called upon to suffer more physical pain than most of them can stand. One factor in the decreasing birth-rate is the great dread of the pains of labour. It is a significant fact that the so-called "twilight sleep" was first successfully carried out in Germany, and that in that country also the most systematic encouragement is given to natural increase in the population.

In conclusion, I will quote the records of four recent cases:—

1. Mrs. T., aged 30, primipara. Duration of labour, 10 hours. First stage, nine hours; second stage, one hour; natural delivery. Number of injections, four. Condition of child, good. No post-partum hæmorrhage; amnesia complete.

2. Mrs. F., aged 40, multipara; seventh child. Duration of labour, nine hours; instrumental delivery, on account of persistent occipito-posterior presenta-



tion. Number of injections, four. Condition of child, good. No hæmorrhage; amnesia complete.

3. Mrs. H., aged 47, primipara. Duration of labour, 48 hours; instrumental delivery. Number of injections, seven, during the last twenty-four hours. Child blue and passing meconium; easily resuscitated. No post-partum hæmorrhage, patient slept four hours after delivery; no shock and no exhaustion; amnesia complete.

4. Mrs. B., aged 26, primipara. Duration of labour, 36 hours; dilatation slow, on account of a rigid os; instrumental delivery. Five injections during the last twenty hours. No result, even though the first was introduced with chloroform. Child's condition, good. No post-partum hæmorrhage; patient's condition, good; no amnesia.

#### CREMATION.<sup>1</sup>

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The progress of cremation has been disappointingly slow, particularly in Britain. The Cremation Society of England was established in 1875, but though the first crematorium, that at Woking, was completed and ready for use in 1879, owing to official interference, the first cremation did not take place until 1885. Since that date there has been steady, but, as already stated, very slow progress, until in 1913, the last year before the war, there were 1188 cremations in Great Britain and the number of crematoria was thirteen. In some other European countries progress was much more rapid. In the 40 largest cities in Germany, for example, there took place in the year 1913, 10,168 cremations, or nine times as many as in Great Britain, and both France and Italy were far ahead of Britain. Even in Japan progress has been more rapid, and in Tokio there are now 22 crematoria. The reasons for British lagging are perhaps not easy to explain. In the early days of cremation religious prejudice was probably largely responsible for much of the opposition to the practice. One of the Popes, Leo XIII., is said to have prohibited cremation, but as a disciplinary measure only, and not for doctrinal reasons. The feeling of dislike to the destruction of human remains by fire was probably largely due to the materialistic views as to the future state which appear to have been held by religious persons during the earlier portion of last century. Probably also the burning of heretics in the middle ages had correlated burning and unorthodox religious views together in the minds of the uneducated, and this had crystallized into a prejudice against the burning of the dead. The prejudice persisted without the reason for it being known. Probably, after all, the cause which has been most largely operative has been the British attitude of mind towards innovations of any kind—an attitude of indifference slightly tinged by hostility. This attitude is to be found not only amongst the un-

lettered but it is most characteristic of that class, and it is noteworthy that cremation has made more progress among the highly educated in England than among the less educated and poorer sections of the community. This is specially interesting in face of the fact that cremation, as carried out to-day in England, is less expensive than earth burial, and so lays a lighter burden on the relatives of the deceased.

The arguments in favour of cremation as a method of finally disposing of dead bodies are very cogent, but they have perhaps not always in the past been urged with reasonable discrimination. This is regrettable, as put fairly, they are quite strong enough without any necessity for over-statement.

The problems of earth burial in a sparsely populated rural district are very different to those which confront one in a large city. It will probably be long before the former assume such urgency as to call for radical changes in the methods of the routine disposal of the dead, and human sentiment has attached itself very strongly to the country churchyard as a last resting place for the worn-out body. But in town cemeteries the conditions are very different. In these places graves are packed closely together in bewildering uniformity, so that the illusion of a peaceful resting-place vanishes and the eye of the visitor is oppressed with long rows of mounds and monuments, which are too often garish and in very bad taste. The very size of the cemetery is oppressive, and its distance in most cases from the home of the deceased does away with any feeling of possession in the minds of the relatives.

Here in Australia we have not yet arrived at the state of overcrowding of our cemeteries which exists in large towns in Europe. Dr. Farquharson gives a sad picture of St. Cuthbert's burial ground, Edinburgh: "In fifteen years 10,800 bodies had been deposited in little more than an acre of ground, nearly all of which had been trenched for reinterment three times, and some of the graves had been re-opened for the reception of fresh bodies eight, nine and eleven times. A furnace was constructed, and in spite of the protests of surrounding inhabitants, was used to burn the remains exhumed from the ground by these operations." In many cemeteries in continental Europe it is the custom to bury destitute persons in a common trench into which corpses are added day by day until the trench is full.

Although we have had nothing so repulsive in Sydney as what I have just described, our burial grounds have not been free from all reproach. There have been at least three cemeteries in the city which have passed through the stages of being filled with dead bodies, disused, and finally converted to other purposes, owing to the increase of population and the requirements of the living. Some ten or twelve years ago excavations were going on within the present Sydney Town Hall premises, and several graves were opened in the course of the work. Some of these are beneath George Street to-day. We all of us can remember the conversion of the great Devonshire Street cemetery into the site of

<sup>1</sup> Read before a Meeting of the Section of Hygiene and Kindred Sciences of the Royal Society of New South Wales on June 12, 1917.

the present Central Railway Station, but probably not many of my audience had the opportunities of being as well acquainted with that old burying ground as I had. I visited it frequently shortly before the exhumation of the bodies and their removal to Botany, and a more neglected, dilapidated looking spot could not well be imagined. Many of the graves and vaults had been forced open, the coffins broken, either forcibly or through decay, and the bones they contained exposed. Several of the vaults were used as shelters by persons of no occupation or of occupations which shunned enquiry. Altogether the state of the place did not fall far short of a public reproach.

We have now several cemeteries in the suburbs of Sydney in which all the available space for graves is occupied, or will be so in the near future. Public sentiment is opposed to the utilization of these burying grounds for any other purpose until at least all the near relatives of those who are interred there shall themselves have passed away. After that, no doubt the same procedure will be followed with them as with Devonshire Street. The idea is not altogether a pleasing one to the descendants of the persons who may be buried in those cemeteries.

The real cause of this state of affairs is want of foresight in the selection of suitable sites for cemeteries for growing cities, but experience has shown that long views do not prevail in this matter in any country, and the probability is that the trouble will always be a recurring one until all such difficulties are done away with by the general adoption of cremation instead of earth burial in urban districts. All our cemeteries are filling rapidly. At present, about 11,000 deaths occur in the metropolitan area of Sydney every year, and this number is, of course, increasing with the increase of population. All these bodies must be disposed of somehow.

The public health aspect of cremation is of the greatest importance. The stories of outbreaks of plague and smallpox caused by the exhumation of the bodies of persons who had died of those diseases, and had been buried for long periods of years—sometimes a century—are now looked on with scepticism, though they were still devoutly believed not so many years ago. There is a growing belief in the power of putrefactive organisms, which are the active agents in the resolution of animal matter into its ultimate elements, to deal effectively with the pathogenic organisms of infectious disease within a reasonable time.

It must not, however, be overlooked that knowledge as to the rapidity with which these putrefactive organisms can destroy the elements of infection in a dead body is very far from complete. There are grounds for believing that the bodies of those who have died of infectious disease are still dangerous to the living for a longer or shorter period after death, and the precaution of destroying by fire such bodies is a wise and desirable one to adopt. There are, moreover, certain infections, of which anthrax and tetanus are examples, in which the

pathogenic organisms may form spores within the dead body. Such spores are very resistant to the processes of decay. Pasteur found living anthrax spores in ground where animals that had died of anthrax had been buried ten years before, and he also found that the active agents for bringing the spores to the surface from the infected animals below were the earthworms. Practically all writers are agreed that the soil may become infected with anthrax from dead bodies which have died of that disease, and may remain so infected for a long time, and that animals pastured upon such soil may contract the disease. This is one of the most striking instances one could have of dead bodies buried in the ground transmitting disease long afterwards to living beings above ground. It must be admitted that our knowledge of the time which must elapse before the dead body of a person who has died of an infectious disease can be regarded as free from all danger to the living is very imperfect. It cannot, to take a concrete case, be authoritatively laid down that the soakage from the grave of a typhoid-infected corpse a year or two after death would be unable to contaminate a water supply to which it had gained access, with the infection of typhoid, whereas one knows quite well that in cremation all power of infection in the dead body is immediately destroyed. No living organisms can possibly, even for a period of minutes, survive the temperature of 1093° C. (2000° F.) to which bodies are submitted in the process of cremation.

Earth burial in or near towns is a danger to the living and a desecration to the dead. Even in isolated country districts there are many arguments in favour of cremation. They are particularly powerful in relation to deaths from infectious disease, or in cases where, for any reason, it is desired to transport the remains to a distance. There can be few more impressive practical demonstrations of the value of cremation than a recent case which occurred in the north of New South Wales. The body of a young man, who had died of an infectious disease, was being conveyed to Sydney for burial. Though the body was cased in lead the metal gave way, and a serious scandal resulted. It is hardly necessary to remark that all trouble would have been avoided had the remains been reduced to some five pounds in weight of harmless ashes before the remains were removed.

I remember seeing in a museum in Florence what can only be described as a very disgusting series of models in coloured wax of corpses rotting in the grave. The work of modelling and colouring had been most skilfully done, and the result was calculated to convince anyone who saw it of the superiority of cremation over earth burial. The exhibit made a most unpleasant impression on my mind.

Though one does not wish to jest on this subject, one of the arguments regularly put forward in favour of cremation seems to me to have a funny side. That is the argument that cremation makes it impossible to bury alive. This argument reminds me of a story told by Weigall, the Egyptologist, of an Egyptian official. The only English official in



an outlying district died suddenly. The next in command, who was a native, telegraphed to the Head of the district: "Mr. So-and-So died suddenly this morning. Propose burying him this evening." Aware of the casual methods of some of the native officials, the Chief replied: "Yes; but be sure he is dead." To which the native promptly answered: "Have made sure—with a revolver."

The religious objections to cremation, if any such still exist in the minds of educated persons, do not seem to require much elaborate comment. Probably no one now believes that the destruction of the body by fire can influence the existence of the individual in a future state. If it does, then, as Lord Shaftesbury remarked, "what becomes of the blessed martyrs?" The recent decision of the Dean and Chapter of Westminster not to admit into our National Valhalla the remains of our great dead except after cremation will do a great deal towards the removal of any residual prejudice against cremation.

Apart from the sentimental objection, which is, I think, gradually weakening under the influence of expanding knowledge, I believe the only argument which can be advanced against the practise of cremation is that of the medico-legal difficulty—the possibility that the detection of a murder might be rendered impossible by the cremation of the body of the victim. That danger was foreseen by Sir Henry Thompson, the great protagonist of the cremation movement in England, and carefully safeguarded by him in a series of rules for the management of crematoria. Those rules have now been embodied in the code of regulations issued by the Home Department in England under the Cremation Act of 1902, and cremation can only take place in England on compliance with the Regulations. The most important provisions of these Regulations are the following:—

1. No cremation can take place except on the written authority of the medical referee, who must be appointed by every cremation authority.

2. A certificate of death containing very full particulars, must be given by a registered medical practitioner who attended the deceased in his last illness, and who can certify definitely as to the cause of death. A confirmatory certificate must also be given either by the medical referee above mentioned, or by a medical man holding one of certain specific public appointments. If these certificates are not forthcoming a post-mortem examination by an expert pathologist must take place and a certificate be furnished by him, or a certificate must be furnished by a coroner after holding an inquest.

Such safeguards as these may be regarded as overcoming the medico-legal difficulty in cremation. It is most desirable that the same or equivalent safeguards should be enforced in respect of every death, whether cremation is to follow or any other method of disposing of the dead body. Our present lax and happy-go-lucky system of death certification is calculated in many cases rather to help the criminal to conceal his crime than to ensure his detection.

Here in New South Wales, cremation has been legal since 1896, when the Public Health Act first became law. But no steps have ever been taken to give this method of disposing of the dead practical effect. A Cremation Society was formed in 1908, and the Hon. Dr. Creed, M.L.C., was elected the first president. He has always been an enthusiastic supporter of cremation, and has done his best to influence the public mind favourably towards it, but we in this country appear to be quite as slow in this matter as our fellow nationals in England. The matter was brought before the New South Wales Parliament in 1913, when a petition containing 14,000 names was presented asking for the erection of a crematorium near Sydney. It was decided, however, that no sum should be placed on the Estimates. The Cremation Society carried a resolution that a private crematorium should be erected, and there the matter rests.

The Public Health Act of New South Wales of 1896 contemplates the introduction of cremation as a routine method of disposing of the dead, and makes the necessary provisions for it. Section 51 of the Act empowers local authorities, or the trustees of any burial ground or cemetery to erect and maintain crematories for the burning of the dead, and provides that the erection and maintenance of crematories and all matters in connexion with the burning of the dead shall be subject to such regulations as the Governor may make.

No regulations have as yet been promulgated under this clause because no definite steps for the establishment of a crematorium have so far been undertaken by any of the bodies empowered to act. There is no doubt, however, that suitable regulations would be framed without delay, as soon as the occasion for them became apparent.

Another clause in the same Act explicitly indicates cremation as a proper means of disposing of the bodies of those who have died of infectious disease, by providing that any legally qualified medical practitioner may certify that an infected body should not be removed from a hospital, and that, when such a certificate has been given, the body referred to must not be removed except to be taken direct to a cemetery for burial or to a crematorium for cremation.

## Reports of Cases.

### CARCINOMA OF THE APPENDIX.

By Howard F. Praagst, M.B., B.S. (Melb.),  
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Carcinoma of the appendix is comparatively rarely recognized, yet a routine microscopic examination of 5,000 appendices removed in the Mayo Clinic, carried out by MacCarty and McGrath, showed that 22 specimens presented microscopic evidence of carcinoma. In a second series of 3,039 specimens, 18 disclosed evidence of carcinomatous degeneration. In none of these series was there any gross evidence of the condition at operation.

It is fortunate that carcinoma of the appendix, when it does occur, involves the tip in the vast majority of cases (90% in the MacCarty and McGrath's series), and does not involve the serosa till late. The early age incidence is of



interest. The vestigial nature of the appendix may account for this early tendency to degenerate. In the series from the Mayo clinic the average age of the patients was 30, the youngest being a female aged 5 years.

The following case occurred in a young male adult, set. 26, and the degenerative appearance of the appendix at the time of operation led to its microscopic examination.

J.E., set. 26 years, admitted to the Melbourne Hospital under the care of Mr. B. T. Zwar, gave the following history:

The past history and family history did not reveal anything of importance. Six days before admission the patient was seized with a sudden attack of pain in the right iliac fossa, and vomited once. The pain gradually eased off, and disappeared in 24 hours. On the day before admission the pain recurred with greater severity in the same position, and vomiting occurred several times, the bowels being opened once with normal stool. The pain increased in severity at night, but eased off on the day of admission, though the patient vomited once.

**Physical Examination.**—On inspection, it was found that the abdomen moved fairly well with respiration, with no definitely localized limitation of movement. On palpation slight rigidity over the right rectus was determined. The maximum rigidity was over the right iliac fossa, with tenderness localized to McBurney's point. On percussion no dulness could be detected in the flanks. The temperature was 37.3° C. (99.2° F.), and the pulse-rate 96.

At the operation, by means of McBurney's muscle-splitting incision, the appendix was found to be acutely inflamed, friable, and slightly bound down at the tip by recent adhesions. The appendix was removed, and on incising it after operation a small ulcer was found in the lumen near the tip. The specimen was sent to the Pathologist.

#### Report of Pathologist (Dr. Connor).

**Macroscopic Appearance.**—The specimen is an appendix of normal length, somewhat thickened and showing evidence of previous inflammation. Recent acute inflammation is present near the tip, where a small flake of lymph is adherent to the peritoneum covering the appendix. On section the lumen is patent, and an ulcer



Micro-photograph of Section of Appendix showing Carcinomatous Infiltration.

is present near the tip, presenting a friable, pale yellow surface to the lumen. Evidence of infiltration and thickening is present at the base.

**Microscopic Appearance.**—The ulcer is due to infiltration and destruction of the mucous membrane by typical spheroidal-celled carcinomatous tissue. None of the original columnar cells are present. The malignant tissue has penetrated the submucous and muscular layers

over the whole area of the ulcer. There is no evidence of glandular infiltration. The remaining portions of the section show old inflammatory trouble in the thickened vessels, some increase in the fibrous stroma, and recent acute inflammation in leucocytic infiltration and fibrinous deposit on the peritoneal surface.



Micro-photograph of Section of Appendix showing Carcinomatous Infiltration.

The specimen was examined and the report confirmed by Sir Harry Allen and Dr. Mollison.

The patient made an uneventful recovery, and at present, six months after the operation, is in excellent health.

It is noteworthy that though the pathological examination revealed definite evidence of previous inflammation in the appendix, the patient absolutely denies any previous abdominal symptoms which could be even remotely connected with the appendix.

In conclusion, I wish to thank Mr. B. T. Zwar for permission to report this case, and Dr. J. I. Connor for carrying out the pathological examination and furnishing the report.

#### ENLARGEMENT OF THE SUPRARENAL GLANDS IN A FATAL CASE OF DIABETES.<sup>1</sup>

By W. F. Litchfield, M.B. (Syd.),

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and

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F.E.H., a female, aged 53 years, was admitted to the Royal Prince Alfred Hospital under the care of Mr. Morton on February 22, 1917. She was a widow, and by occupation a factory hand. There was a history of thirst and a large appetite of eight months' duration. She was admitted for gangrene of the big toe and the second and third toes of the left foot. The urine contained sugar, showed a cloud of albumin on boiling, and had a specific gravity of 1.030. She was fat, and had a profuse growth of hair on the chin.

On February 27, 1917, the affected toes were amputated. On March 20 the left foot was amputated on account of the recurrence of gangrene. The stump did not heal well, and ultimately became gangrenous. A large sloughing bed-sore developed over the sacrum. She became thinner

<sup>1</sup> Read at a Meeting of the New South Wales Branch of the British Medical Association on June 29, 1917.

and weaker, and died after a sudden and brief coma on April 11, 1917.

A post-mortem examination was made next day. There was much subcutaneous fat. The lungs showed emphysema. There was considerable concentric hypertrophy of the left ventricle of the heart, and the right ventricle was dilated. There was atheroma of the aorta and coronary arteries. The liver showed chronic venous congestion and some recent perihepatitis. The spleen was small and hard, and the splenic arteries were quite rigid. The pancreas was atrophied and hard. The kidneys appeared normal, except that the vessels were rigid and gaping and there was an excess of fat in the pelvis. The suprarenal glands were both much enlarged, particularly the left, one end of which was large and globular, suggesting at first glance a new growth. The brain appeared normal, but the cerebral vessels were atheromatous. The pituitary gland appeared to be normal. There was one large and several small fibroid tumours in the uterus.

Under the microscope the liver showed passive hyperæmia, the kidney a moderate degree of fibrosis and thick-walled vessels, and the pancreas a fine fibrosis affecting the whole gland. The islands of Langerhans were present in normal numbers. The spleen showed an increase of fibrous tissue and a corresponding diminution of spleen pulp. The suprarenal gland showed an increase of glandular substance, which, as far as we could tell, affected chiefly the cortical portion of the organ. We did not detect any abnormality of the pituitary gland.

The outstanding features of the case were that, in association with diabetes, there were hypertrophy of the suprarenal glands, pronounced arterio-sclerosis and fibrosis of the pancreas. Can these be correlated in any way? It is a well-established fact that adrenalin in excess in the blood mobilizes the sugar stored in the liver; it is well known also that adrenalin causes constriction of the small arteries. It is further recognized that the pancreas is intimately concerned with the metabolism of sugar, and Professor Halliburton's latest pronouncement on the subject is "the action of the pancreatic hormone is best explained on the hypothesis that it acts as the natural antagonist of adrenalin. We have already noted that one of the results of the administration of adrenalin is the mobilization of the liver's store of carbohydrate; it stimulates the conversion of glycogen into sugar, and excess of sugar is found in the blood, and overflows into the urine. If this is kept within normal limits by the antagonistic pancreatic hormone, no such result follows in health, but if the pancreas is removed or diseased the action of adrenalin is unrestrained, and thus a diabetic condition is produced."

Remembering these things, a simple explanation of the sequence of events in our case would be that some agency brought about hypertrophy of the suprarenal glands, and that the increased secretion of adrenalin resulting therefrom brought about arterio-sclerosis from prolonged constrictions of the small arteries, induced diabetes and caused ultimately fibrosis of the pancreas, due to the overwork of that organ in its vain endeavour to counteract the excessive secretion of adrenalin. We doubt, however, whether the explanation is so simple. For one thing, it leaves unstated the cause of the hypertrophy of the adrenal gland.

It seems to have been thoroughly established that there is an antagonism between the adrenal gland and the pancreas as regards the metabolism of carbohydrates, pancreatic failure resulting in adrenalin glycosuria. According to this view, pancreatic diabetes is primarily an adrenal diabetes. According to Biedl<sup>1</sup> many authors have observed hypertrophy of the suprarenal glands, sometimes of the cortical substance and sometimes of the chromaffin substance in cases of arterio-sclerosis, and some have attempted to show a connexion between chronic renal disease and over-action of the adrenal system. The thyroid gland substance enhances the action of the suprarenal gland, it being well known that suppression of the thyroid secretion increases the tolerance of the organism for sugar. The parathyroids, on the other hand, would appear to counter to some extent the activity of the adrenal glands. The pituitary gland is said to promote the actions of the adrenal system.

Our case, if it does nothing else, points the way to a useful line of investigation.

<sup>1</sup> "The Internal Secretory Organs."

# BRITISH MEDICAL ASSOCIATION AND OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

A bill dealing with the registration of opticians was before the Parliament of Queensland in December last year. An Optician's Bill has been introduced again into the Legislative Assembly of Queensland, and, in view of its rapid progress through this House and the prospect of an early introduction into the Legislative Council, we reproduce the memorandum which was issued in Great Britain in May, 1906.

## Memorandum.

### Bill for the State Registration of "Sight-Testing" Opticians.

The British Medical Association and the Ophthalmological Society of the United Kingdom consider that in the public interest the attention of Members of both Houses of the Legislature should be drawn to important objections to the Bill which, it is understood, the Spectacle Makers' Company and other bodies acting in the interests of certain sections of opticians, are promoting, and which has been introduced by Lord Addington in the House of Lords.

The British Medical Association and the Ophthalmological Society approve of any measures which would increase the efficiency of opticians in their technical work of manufacturing spectacles and other optical instruments, but the Bill in question proposes to create a new class of specially-privileged persons to carry on a certain branch of medical work, namely, the testing of eyesight, which is defined in the Bill as meaning "the science of measuring the refraction of the eye and the adaptation of lenses for aiding defective eyesight."

Persons registered under the proposed Bill would be endowed with special privileges, such as the right to use titles implying that they are qualified to "practise sight-testing and testing sight" and to charge and recover fees for such practice.

It is submitted that such enactments would be misleading and dangerous to the public, inasmuch as it would be thereby suggested that persons who have not had a special medical and surgical training are competent to advise upon and treat defects of vision, many of which, being due to constitutional diseases, cannot be detected by sight testing or corrected by the use of glasses.

The objections to the Bill may be summarized under the following heads:—

1. The eye, not being a separate optical instrument, but a living and inseparable portion of the human body, shares its diseases, and consequently defects of vision are so frequently connected with conditions of local and general disease that their meaning and nature can only be properly ascertained and treated by persons who have received a medical and surgical training.

2. The Bill in question rightly proposes that persons registered thereunder shall not be permitted to use drugs having the effect of paralysing the accommodation of the eye, the promoters of the Bill recognizing that the use of such drugs by persons who have not had a full medical and surgical training is fraught with grave danger to patients. But it must be pointed out that persons requiring to be placed under such a restriction are thereby disqualified for testing the sight in those numerous cases in which this method of examination is necessary.

3. The defects of vision which can be remedied by the use of spectacles frequently occur in conjunction with diseases of the eye which require other means for their detection and treatment. These would certainly be overlooked by non-medical persons whose attention is directed solely to the provision of glasses.

4. Failure of sight is often the first symptom of grave general disease, and if such a condition is treated merely as a visual defect by an optician, the actual disease will be unrecognized, and grave, or even fatal, consequences to the patient ensue.

For these reasons the British Medical Association and the Ophthalmological Society consider that the Bill referred to should not in the public interest be allowed to pass into law.

May 11th, 1906.

[M.S. 63,12,349.]

## The Medical Journal of Australia.

SATURDAY, JULY 28, 1917.

### The Treatment of Diabetes.

The discussion on the treatment of diabetic patients at a meeting of the New South Wales Branch of the British Medical Association recorded in this week's issue of the *Journal* evoked the opinion that the introduction of the use of starvation opened a new chapter in the history of medicine. The tone employed by the various speakers suggested that the failure to cope successfully with this ailment in the past would be replaced in the future by satisfactory results due to the adoption of measures based on the experiments and embodying the practice of F. M. Allen. The evolution of the modern treatment, as it was called by Dr. A. E. Mills, is expected to lead to the cure, rather than the amelioration, of the diabetic state. Starvation will free the urine from glucose and will remove the carbohydrates stored in the tissues of the human organism. The cautious administration of food, containing little starch and sugar, to the starved patient will maintain a condition in which the nourishment of the body is kept at a low level. As the tissues regain the power of oxidizing glucose, the food will be increased in quantity and the nutrition of the body raised towards the normal. The metabolism of the patient will thus approximate to that of a healthy person living on a diminished ration. In time, the use of this treatment will educate the tissues to utilize the glucose derived from a diet sufficient for the needs of the patient when doing his day's work. Diabetes will have been cured.

Those who had treated patients on these principles spoke hopefully of the improvement in health that had been brought about. The urine became free from sugar, the symptoms of the disease disappeared and the weight of the body raised. The medical profession may, however, be reminded that similar results have been claimed for other methods of treat-

ment. Many have alleged that certain diabetic subjects could be kept in good health for years, provided that the weight of carbohydrates in the daily ration was reduced below a particular amount which could be found, by trial, for each individual. These claims are not exaggerated. As a matter of fact, it is admitted by all that diabetic patients can be divided into groups the members of which have very different histories. In one group, perhaps the largest, the patients, usually elderly or in middle life, exhibit a form of diabetes which is readily amenable to the influence of rational dietetics. With some restriction of the starches and sugars in their food, these persons will live long. Indeed, their lives are in their own keeping, and the duration will be, to some extent, determined by the restraint that is exercised over the appetite for sweet foods. It is not correct to describe this treatment, which has been advised by many distinguished physicians, as a failure, since it enables the patient to obtain a useful and lengthy life. In a second group the disease makes greater inroads into the health of the patient. The symptoms and signs of the ailment can only be controlled by great care in selecting the food, but they may be abolished if the patient will submit to the limitation of the food without undue vexation of spirit. The conditions of life are not pleasant, and, sooner or later, the patient rebels against the necessary hardships, and gives up the struggle against the metabolic disorder. In a third group, comprising many young patients, the illness progresses more or less rapidly to a fatal termination. No treatment hitherto employed does more than retard the course of the disease during a few months.

It may be that the new treatment will make it more easy to establish a mode of life in patients of the second group, in consequence of which the subsequent history will not differ from that of patients classed in the first group. Further experience may teach us that starvation followed by a state of low nutrition, will arrest the progress of those severe types of diabetes which have, so far, defied all attempts at treatment. If this should be so, a new era will have dawned for many diabetic individuals.

Some useful service may result from an inquiry into the reasons for the feeling that failure had attended the efforts to alleviate the effects of dia-



betes in past time. The principles underlying the usual methods of treatment are easily enunciated, and are widely known. Their application to the patient is much more difficult than is supposed. The difficulty is increased as the general medical practitioner, and even the physician, despises the use of scales and the check of chemical analysis in measuring the food needed by each patient. In large metropolitan hospitals serving as schools of clinical instruction in Australia, patients are fed with unweighed amounts of food. The attempt to control the nutrition of a patient of the second group without using scales is doomed to failure from the beginning. A patient's estimate of the food eaten is nearly always erroneous. As soon as a medical man does use scales he learns how great is the error introduced by guessing, even with the aid of books, analytical tables and arithmetic, the amount of food-stuffs in the food eaten by a patient in a day. Patients taking 200 gm. proteins, 150 gm. fats and 700 gm. carbohydrates, will often say that they are small eaters, and give ridiculous figures for the weight of food they have eaten. Few admit that they eat too much. Many medical practitioners suggest that the labour involved in weighing the food is out of all proportion to the gain to the patient. Yet they do not fail to understand how poor would be the yield from a smelting works in which the ore and the flux were mixed without being weighed or from a sugar refinery in which the amount of sugar being treated was not accurately measured. If common sense is used in telling the patient what to weigh in his daily ration, the time involved in this light task is negligible. If the medical man will learn to direct the patient to weigh the food, and does not neglect the means which reason suggests to every scientifically trained person as needful for controlling the amount of food, the treatment of diabetic patients will give greater satisfaction.

#### PLUMBIC OCULAR NEURITIS.

In 1891 Sir Thomas Oliver described the neuro-retinitis which is found occasionally associated with poisoning by lead. This condition may set in rapidly, without any concurrent disease of the kidney. The vision may be slightly obscured, or it may be

lost temporarily or permanently. The appearances on ophthalmoscopic examination are similar to those of albuminuric retinitis, while the anatomical lesions, seen after death, are identical with those of retinitis due to nephritis. A year previously Lehmann had recorded cases of saturnism with all the symptoms of retinitis, but with no ascertainable disturbance of the kidneys. An affection of vision is now recognized as a rare but undoubted effect of plumbism. Blindness may occur gradually or suddenly. Lessened vision may be noted with or without a contraction of the field of sight. Central scotoma is sometimes observed. Retinitis is found in all acute cases of lead encephalopathy in which there are signs of increased intracranial pressure.

Lead poisoning seems to be more common among children in Queensland than in other parts of the world. It leads not only to the characteristic wrist and foot drop and to colic, but, in about one-quarter of the cases, to ocular neuritis. In 14 years, 262 children suffering from saturnism were admitted to the Hospital for Sick Children, Brisbane. Sixty-seven of these little patients had ocular symptoms. The condition of the eyes was noted in 1892 by Jefferis Turner, and attributed to basal meningitis. In 1897 Dr. J. Lockhart Gibson discovered the association of the condition with lead poisoning. He also suggested, seven years later, that the lead was derived from carbonate of lead used in paint for garden and verandah railings. The children handled the railings, picked up the powdery paint on their moist fingers and conveyed it to their mouths by biting the nails or sucking the fingers.

Ocular neuritis is observed in an acute form in children from two to eight years of age, who become ill suddenly, with or without colic, and who exhibit vomiting, headache, rigidity of the neck, retraction of the head and paralysis of the external recti muscles, with optic neuritis or choked disc, but who show no raised temperature or albuminuria. A blue line is usually present on the gums, and lead may be detected in small but distinct quantities in the urine. Of 24 patients, seven became quite blind from optic atrophy. A special feature of these cases is the extreme swelling of the discs and the invariable association with *paraplegia externa*. The excellent sight possessed by some of these children with papil-

œdema of several diopters is astonishing. In the chronic cases there is a history of defective sight for months, and, if the optic discs are not atrophic, they are pale, with irregular and blurred outlines. It is a curious circumstance that children with wrist or foot drop rarely show ocular symptoms, though children have been admitted to hospital for paralysis and, some years later, have been again admitted for ocular neuritis or *vice versa*. Early prompt treatment leads to disappearance of the squint and papilloedema and to good sight. Removal from any possibility of ingesting more lead is imperative. Lumbar puncture is performed to lower the intracranial pressure, and means are employed to hasten the elimination of lead. If these children are left in their former surroundings and untreated, optic atrophy and loss of sight results.

The widespread occurrence of lead poisoning in children throughout Queensland is in contrast with its comparative infrequency in the other States of Australia and in the rest of the world. While many medical practitioners agree with Dr. Gibson that it is due to the absorption of lead from paint on wooden houses, others have observed lead poisoning where there is little or no paint on the houses. The occurrence of a number of cases about the same time suggests a special source of contamination of lead from which absorption is possible during a limited time. The careful chemical examinations of Drs. Breinl and Young showed that lead was present in measurable amounts in the faeces and urines of the children poisoned in Townsville. The failure to detect any lead in the excretions of other children living under the same conditions in the same houses caused these investigators to be sceptical as to the derivation of the lead from paint on these houses. Wooden houses coated with lead paint are common all over Australia, but saturnism in children does not occur frequently south of Queensland. There seems to be no reason why children should bite their nails or suck their fingers more freely in Queensland than elsewhere. Some other circumstance may render these children more liable to plumbism. The proportion of ocular cases is far greater than that noted elsewhere, and suggests that lead is not the sole etiological factor.

#### CREMATION.

Many of the pagan peoples of Europe burnt the human corpse; but this custom fell into disuse when Christianity became the recognized religion of civilized mankind and taught the doctrine of the resurrection of the body. The dead have been occasionally consumed with fire in countries professing the Christian faith, but the funeral pyre has been deemed a tribute to heathenism. The influence of this tradition is not yet extinct, and the ignorant still consider the burning of the body to be an act of barbarism. The care of the mortal remains of those related to them by consanguinity has been regarded as a sacred duty by the majority of persons. Even when dust has turned again to dust or has been reduced to ashes, the resting-place of the dead has been protected from disturbance and held in reverence. This sentiment is firmly implanted, and forms one of the most deeply rooted of human wishes. In the disposal of the dead body due consideration should be paid to this desire, so closely woven with the strongest affections and passions of every person.

We publish a judicious advocacy of the substitution of cremation for burial from the pen of Dr. W. G. Armstrong, Senior Medical Officer of Health for New South Wales, who asserts that earth burial in or near towns is a danger to the living and a desecration to the dead. The advance of knowledge has dispelled many of the popular conceptions of the menace of cemeteries to the health of those living in the neighbourhood. On the other hand, it has served to establish the facts that the spores of *Bacillus anthrax* may be formed in the human corpse, that these spores may travel into the earth surrounding the grave, that earthworms may carry the spores to the surface of the soil, and that sheep and cattle may be infected with anthrax by ingesting the microbes along with herbage. These animals may, in turn, transmit the disease to man. Perhaps other micro-organisms may travel in different ways from a cemetery to healthy persons. Whether infection does or does not often happen from cemeteries, it is certain that cremation in a highly heated furnace destroys all possibility of microbial infection from the corpse after its combustion to ashes.

The problem of burial in large centres of population is a difficult one. The space required each year for the reception of tens of thousands of bodies is considerable, and, as Dr. Armstrong points out, foresight in the selection of sufficiently extensive sites for metropolitan cemeteries is sadly lacking. The areas are too small, and lie too near the densely peopled districts. If the town expands, the whole of the ground available is occupied by bodies. Trenching may be employed to aid the speed of destruction of the organic matter so that the earth may serve again to receive the dead. As the cemetery fills, it possibly comes to lie in the centre of a populated town or suburb, and, in time, ceases to be used. As a consequence, some decades later we endeavour to close our eyes to the disgusting spectacles which arise, from time to time, during the resumption of burial grounds for other purposes.

We would fulfil better our obligations to the dead by providing facilities for the decent destruction of

the corruptible portion of man by fire in a suitable crematorium. It is hoped that the various Governments entrusted with the responsibility of the health of our communities will erect and maintain crematoriums for burning the dead, and will enable those who desire it to dispose of their dead by combustion.

#### THE LEUCOCYTES OF AUSTRALIAN ABORIGINES.

The examination of the blood of healthy school children of European descent, born and reared in Northern Queensland, has shown that the Arneth index is distinctly higher (74) than in children living in Europe (41). The proportion of eosinophile leucocytes is also greater. Recently, Drs. Brienl and Priestley<sup>1</sup> have examined the blood of 39 aboriginal children dwelling on Melville and Bathurst Islands, off the coast of the Northern Territory. The children appeared quite healthy, showed no enlargement of the spleen, exhibited no evidence of yaws among them, and revealed no malarial parasites in any sample of blood examined. Yaws and malaria thus appear to be absent from these islands. The blood picture in these aboriginal children closely agrees with that of white children in Northern Queensland. The Arneth index is high (72), and the differential enumeration of the leucocytes shows a similar distribution of the various forms of colourless corpuscles. The figures differ considerably from those obtained by the same observers in 50 native children in New Guinea, where the Arneth index was still higher (84). In New Guinea yaws and malaria are endemic, and more or less widely spread among the children examined. The authors note that the results confirm their view that the high figures yielded in white children living within the tropics in Australia for the Arneth index are due to climatic influence, and are not caused by any change in the blood consequent on abortive infections with malarial parasites.

#### ANALYTICAL CHEMISTRY.

In a lecture delivered before the Chemical Society at Burlington House, London, in March, 1917, Mr. A. Chaston Chapman pleaded for the appointment of special teachers of analytical chemistry in Universities and Technical Schools. He pointed out that, while there was still unhappily the tendency in some quarters to regard analytical chemists as highly skilled labourers, the problems of the war had forced most of those who had to deal with these problems to recognize that analytical chemistry entered into most kinds of manufacture and agriculture. It had been found that the analytical chemist needed a general scientific training, an extensive acquaintance with chemistry, and that he must be mentally alert and adaptable and possess aptitude for research. In the British Empire no instructors in analytical chemistry are appointed, but teachers engaged in other work are expected to give some attention to the training of students in the methods of chemical analysis. In Australia, the Universities and Technical Colleges make no special provision for train-

ing chemical analysts. The State and Federal Governments have not so far encouraged analytical chemistry, except in their own laboratories. Research work progresses slowly, and the scientist too often finds that the results of his investigations are not wanted. Administrators dislike innovations. Truly original work always shows existing views to be erroneous. A highly-placed civil servant bestowed a public rebuke on a scientist who expressed the wish that an analyst might be found in every town of Australia examining the people's food. "God forbid that there be any" was his pious ejaculation. The attitude is common.

Mr. Chaston Chapman enumerated examples of the way in which analytical chemistry had influenced medicine, manufacture, agriculture and mining. He referred to the place occupied by physical instruments in analytical work, and instanced the balance, microscope, polarimeter, refractometer, spectroscope, calorimeter, colourimeter and nephelometer. He described as characteristic examples of the progress of this branch of chemistry, the electrolytic methods for estimating traces of arsenic, the use of phenylhydrazine and phloroglucin in identifying sugars and pentoses in foods, the employment of phenylene-diamine in determining nitrous acid in water and sewage, the colourimetric measurement of nickel with dimethylglyoxime, the classification of yeasts by the enzymes present which ferment different sugars, and the reactions with "precipitin" antisera for detecting horse flesh in sausages and castor oil in feeding cakes, for differentiating artificial from natural honey, and for separating the seeds of two-rowed and six-rowed barley and the proteins of the eggs of different species of birds.

The Advisory Council of Science and Industry met in Melbourne, under the chairmanship of the Prime Minister, to consider how scientific knowledge could be used to develop the resources of Australia. We hope that the Federal Government will accept the advice of the Council and make the knowledge of the scientist available to the community instead of delaying progress by ignoring the facts of science. The training of technical chemists is advocated by the Council.

#### THE CHEMISTRY OF THE DUBOISIAS.

The plants which are classified by botanists in the family *Solanaceae* frequently contain substances possessed of powerful pharmacological qualities. Mention may be made of the midriatic alkaloids of the atropine group and the active principles of the nicotine series. The number of substances classified in the atropine group was at one time numerous, but better methods of purification have led to the separation of some uncommon bodies into two or more well-known alkaloids. The chief members of this group are hyoscyamine, scopolamine and nor-hyoscyamine.

Hyoscyamine is an optically active alkaloid, of which the *lævo*-variety occurs naturally. This optical isomer is powerfully midriatic. Atropine is the racemic form of this substance, and is readily made by shaking the *lævo*-variety with a little alkali. Such

<sup>1</sup> *Annals Trop. Med. and Parasitology*, Vol. X., p. 427, 1917.



atropine as is separated from plants is believed to be due to the racemization of l-hyoscyamine during the isolation of the alkaloids. The dextro-isomer has been prepared synthetically, and is devoid of midriatic properties. Atropine has about one-half of the activity of the lævo-isomer on the eye, as it is made up of equal parts of the two isomers. Scopolamine, which is known commercially as hyoscyne, is also an optically active substance. The natural variety is lævo-rotatory, while the inactive form is readily prepared by racemization. The lævo-variety is more powerful pharmacologically than the dextro form. Nor-hyoscyamine is chemically isomeric with hyoscyamine, but differs from it in the arrangement of certain groups. The name nor-hyoscyamine expresses its chemical constitution, and is, on that account, to be preferred to pseudo-hyoscyamine given by Merck, and to solandrine given by Dr. J. M. Petrie, who isolated this alkaloid from *Solandra laevis*. Its pharmacological action has not been described, but experiments made in the University of Sydney show that it behaves like atropine.

Among the plants of the *Solanaceae* growing in Australia are three species of *Duboisia*. *Duboisia myoporoides* is an evergreen tree, ranging through the coastal district of Eastern Australia from Cape York to the Shoalhaven River. In 1877 Bancroft, of Brisbane, published an account of the action of aqueous extracts of the leaves of this tree. He paid much attention to the midriatic properties of these extracts, which were used in ophthalmic practice in Brisbane. Bancroft took several pounds of the extract to England in 1878. Gerrard separated the alkaloid in a purer state from this material, and concluded that it differed from atropine. Ringer and Murrell observed the dilatation of the pupil of the eye, the arrest of perspiration, the antagonism to muscarine, the production of tetanus in frogs and the onset of headache and of drowsiness in man. They believed the new alkaloid to be different from atropine. Ladenburg obtained the crystalline gold chloride of hyoscyamine from a commercial sample of duboisine sulphate. Some years later, from another sample, Ladenburg prepared the gold salt of scopolamine. In 1892 E. Merck isolated a new alkaloid, which he named pseudo-hyoscyamine. In 1912 Carr and Reynolds obtained from *D. myoporoides* 1.1% of hyoscyamine and 0.15% of nor-hyoscyamine identical with pseudo-hyoscyamine. Dr. J. M. Petrie<sup>1</sup> recently examined a sample of duboisine sulphate belonging to the Physiological Laboratory of the University of Sydney. It yielded l-hyoscyamine, l-scopolamine and nor-hyoscyamine.

In 1860 Baron von Mueller described *Duboisia hopwoodii* from specimens brought back from the Burke and Wills expedition. Bancroft obtained in 1872 samples of the "pituri" which was used by the aborigines of the interior as an intoxicant. Mueller and Bailey identified "pituri" with *Duboisia hopwoodii* in 1876. Langley and Dickenson in 1878 showed that pituri was closely similar to nicotine in its physiological properties. Gerrard isolated the alkaloid, and named it piturine. Petit, of Paris, in 1879, identified piturine with nicotine. Professor

Liversidge examined the alkaloid a year later, and concluded that it differed from nicotine in the amount of nitrogen present. In 1910, however, the late Dr. Rothera, of Melbourne, proved conclusively that piturine was identical with nicotine.

In 1867 Mueller described *Duboisia leichhardtii* from material supplied by the explorer Leichhardt. This plant is a Queensland species, growing in the area between that occupied by *D. myoporoides* on the coast and by *D. hopwoodii* in the centre of Australia. Dr. J. M. Petrie has found the fresh leaves to contain 0.28% of mixed alkaloids. From half a gramme of mixed alkaloid he has separated 0.1 gm. l-hyoscyamine, 0.1 gm. l-scopolamine and 0.2 gm. nor-hyoscyamine. Now that accurate information is available as to the distribution of these valuable medicinal substances in native trees, it is to be hoped that chemical enterprise and manufacturing ability will bring about the supply of these substances to the medical profession and to the public from Australian sources.

## Public Health.

### SOUTH AUSTRALIA.

The following notifications have been received by the Central Board of Health, Adelaide, for the week ending July 7, 1917:—

	Adelaide.		Rest of State.		Totals.	
	Ca.	Dths.	Ca.	Dths.	Ca.	Dths.
Diphtheria .. .. .	7	1	28	2	35	3
Pertussis .. .. .	0	0	18	0	18	0
Morbilli .. .. .	0	0	7	0	7	0
Scarlatina .. .. .	1	0	5	0	6	0
Pulmonary Tuberculosis	0	0	2	5	2	5
Erysipelas .. .. .	0	0	1	0	1	0
C'bro-Spinal Meningitis	0	1	0	0	0	1

### FEDERAL INCOME TAX RETURNS.

Income tax returns for the twelve months ended June 30, 1917, must be lodged on or before the 31st August next.

If for any reason the return cannot be completed so as to be lodged by this date, an application must be made to the Taxation Department for an extension. Assessments made on all returns which are lodged after the due date will, if an extension has not been granted, include a penalty of 10% additional tax. No exception to this rule will be made.

Business people who close their accounts on dates other than the 30th June may apply for permission to base their returns on their own accounting period of twelve months instead of the June to June period.

Any person whose income is derived solely from sources in one State should lodge his return with the Deputy Federal Commissioner of Taxation in each State. If the income is derived from several States, the return should be sent to the Commissioner of Taxation at the Rialto, Melbourne, on special forms.

The requirements of the Federal Department are altogether independent of the requirements of the State Department.

Forms of returns are available at all Post Offices.

The Public Service Board are inviting applications for the position of Resident Medical Officer, Cordeaux Dam, Department of Public Works, with pay at the rate of £500, plus residence (£50 per annum), which will be erected near the site of the works. The Department will provide medicines, dressings, etc., but the appointee will be required to supply surgical instruments. Applications on a form for the purpose should reach the Secretary, Public Service Board, before July 28.

<sup>1</sup> Proc. Linn. Soc., New South Wales, Vol. XLII, p. 118, 1917.

## Abstracts from Current Medical Literature.

### SURGERY.

#### (28) Bone Grafting for Potts' Caries.

W. J. D. De Cury Wheeler (*Dublin Journ. Med. Science*, April, 1917) deals with the treatment of tuberculous disease of the spine by bone grafting. Reasoning, in the first place, in the case of a child on the analogy of other tuberculous joints, bony consolidation of the diseased vertebrae may be hoped for after a reasonable period of recumbency on a suitable apparatus. In the case of an adult it must be assumed that the tuberculous process is more likely to extend or remain stationary than to diminish or disappear. With a patient from the leisured class, either adult or child, a more satisfactory result is likely to be obtained than in the case of a wage-earner, who finds it impossible to pay attention to treatment after discharge from hospital. The author states that it was after 135 years of conservative surgery that operative treatment was first suggested, and it was not unnatural that surgeons were at first shy in adopting the newer methods. In considering the operative treatment of Potts' caries, it is hardly necessary to point out that the bone graft *per se* has no curative effect, but the immobilization afforded by its introduction into the diseased segment of the spine is far more effectual than can be obtained by any form of apparatus. Albee is quoted as stating that fairly solid incorporation of the graft with the vertebrae takes place in about four weeks. The theories of McEwan and others as to what happens to the transplant are given, and, in considering these theories, the writer notes how a graft behaves under certain pathological conditions, and quotes a case of his own, where a chronic osteomyelitis was established in the transplant as the result of infection from a bed sore. Twelve months after operation, when complete consolidation had taken place, the cortical part of the lower third of the graft was extruded as a sequestrum. It is also stated that if a bone graft is fractured accidentally it will unite by the formation of callus, and that a graft will grow and survive in the abdominal wall with or without periosteum. It is therefore concluded that a graft is really viable, and behaves to all intents and purposes exactly as it did when it was part and parcel of the bone from which it was removed. The treatment and results in six cases on which the author operated are given.

#### (29) Treatment of Burns with Paraffin Mixtures.

Rudolph Matas (*New Orleans Med. and Surg. Journ.*, April, 1917) refers to the perennial interest that attaches to the treatment of burns and the innumerable suggestions that are constantly

cropping up in the literature for the treatment of the graver types of this most frequent and painful injury. These innumerable suggestions show that there is still much room for improvement in the classical and routine methods that are now in vogue. This accounts, in part, for the widespread interest shown in the lay and professional press in the results claimed for the "ambrine" treatment since it was introduced by its originator, Dr. Barthe de Sandfort in the beginning of the present war. The author quotes a correspondent in the *Medical Record of New York* as stating that, among the new engines of warfare that have been employed in this most awful of all wars, none are more awful, or have been the cause of more horrible suffering, than those engines for projecting liquids or explosive shells filled with those liquids which char the face and hands, and when projected against a person burn up the clothing like April snow before the sun, leaving the integument and aponeurosis blackened and shrivelled. It is in connection with the treatment of these fearful injuries, created as it were by the new conditions of war, that the new remedy "ambrine" has come into prominence. So extraordinary have been the claims that have been made for this remedy that a reasonable scepticism has been roused as a result of an extreme and indiscriminate laudation, and were it not for the testimony of credible and thoroughly unprejudiced observers, who have lately investigated the results of Dr. de Sandfort's treatment, it is probable that a really valuable acquisition would have been condemned in the face of the over zealous and injudicious advertising that this treatment has been given at the hands of non-medical writers. The doubts cast upon the genuineness of the so-called discovery have been aggravated by the fact that "ambrine" is a proprietary product, and has been exploited by a manufacturing company. This accounts for the scant sympathy which "ambrine" has received at the hands of the medical profession. Fortunately, the inquiries of Major A. J. Hull, of the British Army in France, fully sustain the value of "ambrine" as an application of remarkable efficiency in the treatment of burns of all degrees. Dr. de Sandfort admits that "ambrine" is a compound of paraffin oil, of sesame and of resins, but is not at liberty to divulge its exact composition, as the formula and manufacture is now the property of a private corporation. Dr. Matas quotes Major Hull's personal observation and comments on the merits of Dr. de Sandfort's "ambrine," and the formulae of preparations to correspond to this proprietary article are given, as well as the method of application. Notes on ten cases under the author's care are given, in which the formula of Hull or a modification was used.

#### (30) Disease of the Gall-Bladder.

O. F. Lamson (*North-West Medicine*, April 19, 1917) deals with some facts

relating to gall-bladder disease. Since the liver, pancreas, stomach, duodenum and biliary passages are closely allied from a physiological point of view, it is obvious that a disturbance in one may affect any of the others. It thus becomes almost impossible at times to trace the source of an existing pathological condition. Since these organs have been evolved from one structure, the primitive alimentary canal, and work and suffer more or less as one unit, it becomes illogical to speak of definite pathological lesions of the gall-bladder. Functional disturbances of the duodenum or stomach have been shown to be associated sooner or later with lesions of the gall-bladder. Anatomically, the gall-bladder may be looked upon as a diverticulum of the bile duct, enlarged at its extreme end and forming a temporary reservoir for bile. The author does not agree with the view that the gall-bladder is merely a store-house for bile, since its capacity normally is a little over 30 c.cm., and 900 c.cm. pass through the passages during each 24 hours. Under certain conditions, e.g., after an operation has been performed for the removal of an obstruction in the common duct, the output during the first 24 hours may be increased to one and a half litres. Inflammation of the mucosa of the organ, due to bacterial infection, is the starting change in the majority of gall-bladder infections. The infections either ascend from the duodenum or descend indirectly through the liver from the portal circulation. The author holds that an infection spreading through the blood channels is more damaging to the structures. He deals with cholecystitis following typhoid fever. At times an active culture cannot be made of the typhoid bacilli, and yet a characteristic growth may be produced when the mucosa ground up is utilized. Rosenow demonstrated that bacterial infection frequently reached the gall-bladder through the blood channels. Acute cholecystitis following pneumonia may be due to the extension of the infection through the blood channels. Cholecystitis is characterized by fever, jaundice, and colic, or any of these symptoms. When the infection is continuous, constipation is produced, while, when it is complicated by pancreatitis, there may be diarrhoea. Jaundice is generally present when the lower end of the common duct is involved. He suggests that a small valve situated at the opening of the duct, described by Archibald, may be closed by the hardened or diseased head of the pancreas, and thus give rise to jaundice. In summing up his experience, he elaborates the opinion that the acute type of the disease should be treated by medical means and a reasonable time allowed for them to produce their effect. If the symptoms persist in spite of these measures, surgical interference should be resorted to. The chronic, recurring type should be treated surgically as soon as the exact nature of the affection has been determined. He is of opinion that the risk



attending the operation is small as compared with the dangers associated with the condition.

## GYNÆCOLOGY.

### (31) Sterility.

M. T. Goldstein (*Surg., Gynec. and Obstet.*, May, 1917) presents briefly his experience in the study of barrenness in the female. He divides cases of sterility in women into two groups: (1) Those cases in which the pathology is so severe that it is at once apparent to the examiner that the women cannot become pregnant, for instance, cases with pus tubes, with tubo-ovarian abscess, with large fibroids, with absence of tubes, uterus or ovaries removed by operation, with abnormal development in which there can be no union of ovum and spermatozoon and with dyspareunia preventing normal coitus. (2) Those cases in which the factors causing sterility are of an obscure nature, for instance, cases with salpingitis with non-palpable tubes, with ovaritis without enlargement, with changes in the uterine mucosa, with immaturely developed uteri, with acute antelexion, with partial stenosis of the cervix, with changes in the vaginal, cervical or uterine secretions, with one pregnancy sterility, with appendicitis, with goitre, with wasting diseases, with obesity and with physconia. He advises, in all cases of the second group, a thorough examination of the husband before investigating the causes of sterility in the female. He asserts that 50% of childless marriages are due to the husband. He believes that gonorrhoea is given too important a place in the causation of female sterility. He has, in cases of sterility in which the husband is suffering from a discharge, made a vaccine and injected it into the wife with good results. In his opinion the uterus is most often the seat of difficulty. An immaturely developed uterus with partial stenosis of the cervical canal with or without retroflexion or acute antelexion, is very often the cause of sterility, and he advises dilatation of the cervix and insertion of a silver stem pessary retained in position by suture and allowed to remain for two or three months. This pessary acts as a foreign body, causing uterine contraction and enlargement of the body of the uterus. The author considers this method preferable to cutting operations on the cervix. In over-anxious recently married people he advises delay, as the female organs sometimes develop under the influence of sexual intercourse, and the desired result is obtained. He never feels justified in advising an exploratory laparotomy in cases in which an examination has revealed no pathology, except when all methods of treatment have failed. Changes in the secretions detrimental to spermatozoa, can be overcome by proper medicinal treatment. He considers that in the study of sterility the factors of goitre, obesity, alcohol, lack

of sexual enjoyment, too frequent indulgence in sexual intercourse, have never been clear. Appendicitis undoubtedly plays an important part in causing sterility, as it often infects the right tube and ovary and affects the left appendage and the uterus. In his experience one pregnancy sterilities have been very unsatisfactory cases to handle, and have given poor results, particularly in those in whom induced abortion had been performed early in married life. The element of infection enters largely into these cases, and the difficulty most likely lies in the ovaries rather than in the tubes, as a puerperal infection is more apt to attack the former. He has noticed that normal individuals may live together as husband and wife for many years without producing offspring. Then, for some unknown reason, the wife becomes pregnant. Marriage may be entirely barren and the parties separate, marry others, and both have children. He regards the mental factor, viz., the desire to conceive or not to conceive, as having very little influence on sterility.

### (32) Third Stage of Labour.

H. K. Gibson (*Surg., Gynec. and Obstet.*, May, 1917) gives some observations on the conduct of the third stage of labour. He asserts that, in his earliest years, he religiously held and massaged the fundus to see that it remained in a state of tonic. He finds that nurses and internes almost without exception are still obsessed with the idea that watching the uterus implies uninterrupted manual attention, which they are never loth to render. He states that the separation of the normally situated placenta is, or should be, just as distinct a physiological entity as the birth of the child, and he asserts that most practitioners, as well as contemporary text-books, lose sight of the distinction between separation and expulsion of the placenta. He points out that there is a so-called state of physiological inertia of the uterus following immediately upon delivery, the duration of which is between five and fifteen minutes. He is of opinion that, in the absence of hæmorrhage, a Credé expression attempted prematurely, before separation is complete, is as fraught with consequences as the application of forceps to the incompletely dilated cervix, without exception carrying with it the possibility of creating a real alteration in the delicate mechanism of separation which, in its turn, brings one to a possible manual inversion of the uterus, with its estimated mortality of from 5% to 10%. At St. Luke's, he has endeavoured for some time past to secure data upon the clinical phenomena of separation of the normally situated placenta and its membrane, particularly as to the time required, the amount of blood lost, but, above all, the necessity or non-necessity of any and all uterine massage in the absence of the hæmorrhage. He has endeavoured, in the main, to base his conduct of the third stage, as far as is practicable, on visual rather than on manual observation. Immediately upon

delivery the patient's pulse is recorded. The author assures himself that the bladder is empty, as a distended bladder is not conducive to a physiological third stage. The height and form of the uterus are ascertained visually or by palpation. If signs of serious hæmorrhage are present, massage is resorted to. When the separation is complete, simple expression is practised. The author has arrived at the above technique during the past three years, and has been impressed firstly with the rapidity of separation where massage is not practised, secondly, with the relatively slight amount of bleeding, and thirdly, with the large percentage in which the foetal surface of the placenta presents. He believes that, at the present time, rather too much massage and uterine manipulation than too little is practised, and, although he is not personally familiar with the purely expectant plan of treatment as advocated by Ahfeld, he is of opinion that, if compelled to choose between it and the dogmatic treatment of expressing the placenta by the Credé method at the end of 30 minutes, he would select the former method, and by so doing would have a lower morbidity. He believes in and practises the minimum of uterine manipulation, particularly during the period immediately following delivery.

### (33) Genital Tuberculosis.

S. Sheill (*Dublin Journ. Med. Science*, February, 1917) reports a case illustrating the possibility of the transference of tubercule from husband to wife during coitus. The former suffered from tubercule of right kidney, with deposits in right seminal vesicle and epididymis. The diagnosis was proved by tuberculin injection, and later by the removal of right kidney, which was found on examination to be markedly tubercular. The wife consulted the doctor at the same time as her husband made his first visit. They had been married for five weeks. Previous to her marriage she had enjoyed excellent health. Her complaint was a tender and painful swelling in the groin, and examination revealed three large and tender lymphatic glands in that region. Syphilitic and gonorrhoeal infection were excluded. *Per vaginam* some undue tenderness in the broad ligament and ovary, on the same side as enlarged glands, were found. A positive von Pirquet reaction was obtained, as well as a positive reaction to tuberculin (38.3° C.), with marked local reaction in lymphatic glands of groin. She underwent a course of tuberculin injections, during which all signs and symptoms of her disease abated. The author considers that the case certainly opens up the large question of State interference on the subject of marriage of the tubercular, especially if the site of the disease happens to be the genital organs. In the meantime he thinks there is food for thought on the part of the medical man who might be consulted by a tubercular patient contemplating marriage.



## British Medical Association News.

### SCIENTIFIC.

A meeting of the Victorian Branch was held at the Medical Society Hall, East Melbourne, on June 6, 1917, Professor R. J. A. Berry, the President, in the chair.

Dr. W. Atkinson Wood read a paper on "Thirty-three Cases of Appendicitis in Children," and exhibited a series of specimens (see page 65).

Dr. A. Norman McArthur asked to what extent toxæmia was produced by chronic appendicitis. He had noticed in many cases that certain morbid conditions became cured after appendicectomy. He instanced a case of a youth, aged 18 years, who had had chronic eczema, with acute exacerbations on the face and hands. The eczema persisted for 12 years, during which time he was under expert treatment in Melbourne and Launceston. He had then had an attack of acute appendicitis, and appendicectomy had been performed. There had been no recrudescence of the eczema for the six years following the operation. Although he recognized that absolute proof was not present, it was certainly suggestive that the appendix had had something to do with the cause of the eczematous condition. Dr. McArthur also asked for information in regard to the normal range of movement of the appendix. Did it partake of the peristalsis of the bowel? It was found in diverse positions. He had at times found it agglutinated to the right salpinx, and occasionally even to the left salpinx. When both tubes and the appendix were inflamed, the original cause of the inflammation was usually situated in the tubes; but when only one tube and the appendix were involved, it was difficult to determine which organ was primarily affected. He had dug out a few appendices from under the caecum and from behind the ascending colon, between the two layers of the meso-colon. In regard to the diagnosis, Dr. McArthur stated that reflected pain was often very misleading. In the presence of general abdominal rigidity, it was frequently difficult to differentiate between gastric perforation, gall bladder trouble and appendicitis. He would be glad to hear from Professor Berry or from Dr. Wood the anatomical explanation of the transference of pain.

Dr. J. Newman Morris said that he had been greatly interested in Dr. Wood's series of cases. He had been struck by the rarity of the condition in children, and by the pitfalls in the diagnosis. He had only seen three cases in children under 14 years of age. His first case was in a child aged 12 years, with gastro-intestinal symptoms. The condition did not look like appendicitis, and he had been tempted to wait. It had, however, proved fatal within 36 hours. He raised the question as to how long the surgeon should wait before operating. Were there any signs pointing to appendicitis which should determine the surgeon to operate? He had had only two cases in children under 14 years of age, as compared with 130 cases in adults, and he wondered whether he had not missed the diagnosis. He was not aware of having done so. Disasters due to the early signs being ill-defined or absent were not uncommon. He thought it would be advantageous if the symptoms and physical signs of the condition could be accurately defined. Cases similar to that described by Dr. Wood of a child eating green mulberries or cherries were not infrequently met with. The parents usually gave castor oil, and valuable time was lost before the doctor was sent for. He asked Dr. Wood if he could give a more detailed account of the circumstances attending this case. At times pulmonary affections, including pneumonia, were mistaken for appendicitis. The appendix had been removed without benefiting the patient, and the pneumonia had run a typical course later.

Dr. Bernard Zwar complimented Dr. Wood on having systematized his cases from a scientific point of view. He referred to what was generally believed to be a rare condition, namely, carcinoma of the appendix. At the Melbourne Hospital it was customary to send to the Pathologist only those appendices which appeared to be very unusual. He referred to the case of an adult, aged 26 years, who had been admitted into the hospital during the second attack. The appendix had been removed with some difficulty. It

had been necessary to shell out the basal part, and during this process he had been struck by the appearance of the appendix, which was more like that of an individual considerably older than the patient. The Pathologist reported that there was carcinomatous infiltration, and the diagnosis was verified by Dr. Mollison and Professor Sir Harry Allen. It was the practice of the Mayo Clinic for the pathologist to examine every specimen removed at operation. It had thus been shown that carcinoma of the appendix was not as uncommon as was usually believed. Carcinoma of the appendix had been found 22 or 23 times out of 5,000 cases of appendicitis. The youngest patient was only five years old, while the average age was 30 years. It had been suggested that, as the appendix was a degenerate organ, it was specially predisposed to carcinomatous changes. It was only by systematizing and looking for changes that might be present that medical men were likely to extend their knowledge concerning conditions that were regarded as comparatively rare.

Dr. Alex Lewers mentioned a case in which the difficulty of differentiating between typhoid fever in an early stage and appendicitis was exemplified. There was persistent pain and tenderness, and a rapid pulse. After the patient had been watched for over 24 hours the appendix was exposed, but was found to be healthy. Nothing further was done; the patient passed through a typical attack of typhoid fever and made a good recovery. The abdominal incision gave no trouble.

Professor R. J. A. Berry stated that his reason for taking part in the discussion was that he had published several papers on the vermiform process, and wished to contravert a statement of Dr. Wood that the process was a degenerate structure, which was tending to disappear from the human organism. In almost every text-book it was stated that the vermiform process was a vestigial structure; this statement was not borne out by scientific investigation. There was an undoubted association between the diet of an animal and the form and position of its caecum. In carnivorous animals it was short, and in herbivorous animals it was long. In omnivorous animals, such as man, it was neither short nor long. Only a few animals had a distinct vermiform process. Among these were the rabbit, the anthropoid ape and man. If the caecal apex of animals were examined under the microscope, it would be seen to consist of a mass of lymphoid tissue varying in amount according to the requirements of the animal. It had been proved that, whether the process were present or not, there was an homologous mass of lymphoid tissue in the caecum. Unless they were prepared to assert that lymphoid tissue had no function, it would be illogical to hold that the vermiform process was without purpose. It was an undoubted lymph gland. Professor Berry dealt briefly with the pathology of lymphoid tissue. Lymphoid tissue was found in the alimentary canal in three sites: (a) in the pharynx, (b) in Peyer's patches, and (c) in the vermiform process. In the pigeon, cat and rabbit, there was no lymphoid tissue in the caecal region at birth. It appeared at the commencement of active diet. In man, it did not make its appearance until about six weeks after birth. It had further been shown that lymphoid tissue was a tissue of the growing animal, and that its growth was completed at about the thirtieth year. After this it commenced to disappear. The rate of disappearance varied. These facts coincided with the incidence of disease. He pointed out that tonsillitis, typhoid fever and appendicitis were diseases of adolescence, and that the pathological changes in these diseases involved lymphoid tissue. He held that the study of the physiology and pathology of lymphoid tissue had not yet been exhausted. Until it was definitely known what the function of lymphoid tissue was, it was inadmissible to assert that the vermiform process was a useless and vertigal organ. Its position was inconstant, but it possessed a fixed relation to the caecum. It could always be found by following down the muscular band of the descending colon. Professor Berry stated that he believed that he had been the first to describe the presence of threadworms in the vermiform process (*Journal of Pathology and Bacteriology*, April, 1895). In conclusion, he suggested that more attention should be devoted to the study of lymphoid tissue.

Dr. W. Atkinson Wood said that he would like to read Professor Berry's articles. He admitted that lymphoid tissue might be of great importance, but that all its uses were not known. They were in the habit of taking away a good deal of it in children, and yet, as far as they knew, the children were better off after removal. Dr. McArthur's case of toxemia was interesting. It illustrated the advisability of not saying "Good-bye" to their patients after they had operated on them. The names and addresses of those who had been operated on should be kept, and the patients should be written to after a year and asked to present themselves for examination. He thought that they would have their eyes opened in a good many cases, if they ascertained the condition of the patient after operation. He had done this during the past six months, and had asked the mothers to bring up their children. Gall-bladder affections were not met with in children. These affections were often secondary infections from the appendix, and it took a long time for the process to reach the gall-bladder. Only patients under fourteen years were admitted to the Children's Hospital. Appendicitis was a common affection among the patients at the Children's Hospital. In 1916, of every 36 patients admitted, one was operated on for appendicitis. In dealing with the differential diagnosis between appendicitis and gastro-enteritis, Dr. Wood stated that he placed more reliance on distinct tenderness over the appendix than on any other symptom. It was advisable to engage the attention of the child while the abdomen was being palpated. If tenderness in this situation were elicited, he proceeded to operate at once. After he had read the report of the Mayo Clinic, he had determined to examine every appendix removed. Carcinoma was readily overlooked, and the nature of the infiltration could not be determined without minute examination. He agreed with Dr. Lewers that it was easy to mistake typhoid fever for appendicitis. He called attention to the fact that acute appendicitis might occur in the course of an attack of typhoid fever. The appendix he had removed in a case of typhoid fever had been very inflamed.

Dr. E. H. Heffernan read a paper entitled "Experiences in 300 Cases of Parturition Treated by Scopolamine-Morphine Injection" (see page 68).

Dr. John Stone Thwaites stated that he had used scopolamine and morphine extensively in a private hospital at Mansfield nine years before. He had had trouble with the babies in the first four cases of primiparæ. He had given 0.015 gm. ( $\frac{1}{4}$  gr.) and 0.0006 gm. ( $\frac{1}{100}$  gr.) of scopolamine, and had given a second dose of 0.01 gm. ( $\frac{1}{4}$  gr.) of morphine. He had not lost any of the babies, but had spent three-quarters of an hour in resuscitating one. Since then he had not given a second dose of morphine, but had increased the first dose to 0.01 gm. ( $\frac{1}{4}$  gr.), save in the case of primiparæ, to whom he still gave 0.015 gm. ( $\frac{1}{4}$  gr.). In a few cases he had had some difficulty with the baby, but it had not been serious. These cases were chiefly in multiparæ, and the morphine had been given within two hours of the birth of the child. In 1915 he had experienced some trouble in a private hospital where the nurse, acting without instructions, had given a second dose of morphine. The child, however, had been resuscitated. He was using the method in private houses, with more or less favourable results. In some cases the results had been unsatisfactory, while in others they were wonderful. In one case the patient had become maniacal after the first dose, and two nurses had to be employed to hold her down. He had prepared a paper two years before on the subject, but had been prevented from reading it by illness. He hoped to give his experiences within a short time. The ideal conditions for the employment of this method were in private hospitals, where the matron understood the working of the process. Post-partum hæmorrhage had not occurred in his cases, but he always gave injections of ergotin and pituitary extract.

Dr. J. W. Dunbar Hooper complimented the author of the paper on the title he had selected, and on having avoided the use of the term "twilight sleep." He had read in *The Practitioner*, two months before, that the use of scopolamine had been satisfactory. Stress had been laid on two factors—there must be a satisfactory environment, and there must be a qualified nurse in attendance. It was also held that a

medical practitioner should be in attendance nearly the whole time. It was impossible for busy medical men to give such constant attention to these cases, and, consequently, the danger of the treatment was evident. Two of the speakers had mentioned cases of mania, which had necessitated two or three nurses holding the patient down. In the Freiburg Clinic it had been admitted that the second stage was prolonged, and that there was some danger of post-partum hæmorrhage. Every one who had written about the benefits of this amnesia had admitted that they used ernutin or pituitary extract, and the majority of them had used chloroform during the second stage. The speaker had only employed the method in three cases, and he was not inclined to do so again. One patient had become maniacal, in the second there was a prolonged second stage, and in the third there had been uterine atony during the third stage. The only advantage he had been able to find of the method was that it undoubtedly conserved the patient's mental attitude, and saved her from the dread of a second confinement. He held that it demanded more time of the medical practitioner than the majority could give, and that it involved some serious risks to the mother and the infant.

Dr. R. H. Morrison stated that there was a great difference between the ordinary morphine-scopolamine treatment and *Dämmer Schlaf*, or "Twilight Sleep." He had seen the latter used at Krönig's Clinic at Freiburg in 1913. Up to that time the method had been used with satisfactory results in over 3,000 cases. He learned, however, that it had been abandoned in Vienna and Munich. In America it has been almost universally condemned, and in its place nitrous oxide and oxygen inhalations given during the pains and extending over several hours was being used to produce analgesia.

Dr. Arthur Sherwin referred to the symposium published in the *Practitioner*. One of the contributors had recorded that the method had been abandoned, except in the case of primiparæ. It had been regarded as unsatisfactory because of the number of blue babies and deaths. During a recent visit to Europe he had found that the method was no longer used at the maternity hospitals in Paris. It was unsatisfactory in general practice, especially when the nurses were of the type of "Mother Gamp." In private hospitals it was often attended with good results. It was undoubtedly true that its use delayed the second stage of parturition. His rule was to get through the second stage as quickly as possible. The experience made at the Out-patients' Department at the Women's Hospital was that it had been responsible for bladder complications, cystocele and rectocele.

In his reply, Dr. Heffernan admitted that he had seen cases of restlessness after the use of morphine, hyoscine and scopolamine, but maintained that in every case the dosage was at fault. He agreed that it might be found unsatisfactory for general practice, but as he worked under ideal conditions and had an excellent assistant in the person of his wife, who was a qualified medical practitioner, he advocated its use.

A meeting of the New South Wales Branch was held on June 29, 1917, at the B.M.A. Building, 30-34 Elizabeth Street, Sydney, Dr. W. H. Crago in the chair.

Dr. A. E. Mills opened a discussion on the treatment of diabetes. He said that he would be safe in stating that the modern treatment of diabetes took its origin from F. M. Allen. Although Allen was not the only man who had worked scientifically on this condition, he had established certain principles which were opposed to the previous teaching. He had experimented most carefully and systematically on dogs and cats, and the speaker held the opinion that the researches were quite revolutionary. He had been careful not to assume anything that he could not prove. He had been able to produce varying grades of diabetes in his dogs, and by treatment he had kept the animals in a state of good health. As if by sleight of hand, he had arrested or increased the glycosuria by varying their diet. Having established the principles on which diabetes could be produced and arrested in dogs, he extended these

<sup>1</sup> "Twilight sleep" has been introduced as a translation for the term originally employed by Krönig—*Dämmer Schlaf*. It is singularly incorrect and unsuitable. The word means the condition between sleeping and waking—a condition of confused consciousness.



principles to the treatment of diabetes in human beings. Dr. Mills proceeded to give an account of Allen's experiments. Before doing so he raised the question as to what they meant by diabetes. He pointed out that not every case of glycosuria should be regarded as a case of diabetes. He instanced a case of a man who complained of vague aches and pains. The only objective sign discovered was a considerable glycosuria. On enquiry it had been found that the patient had given up smoking, and as a solace had indulged heavily in eating sweets. After the sweets had been cut off, the sugar disappeared from the urine and the symptoms cleared up. Pavy had taught that there was an alimentary type of diabetes, in which the patient took too much sugar and excreted the excess in the urine. He also recognized a composite form. Dr. Mills distinguished sharply between glycosuria and diabetes. Glycosuria could be induced by adrenalin, by phloridzin, and by an excess of sugar in the diet. Apart from these forms of glycosuria, he considered that it would be safe to assume that any slight glycosuria was usually a mild diabetes. In order to understand the problem better, it was necessary to have a definition of the term diabetes. Allen has defined it as a disorder of metabolism due to a modification of the internal secretion of the pancreas. As he would show, this definition was based on the experiments which had been conducted on dogs, and was justified by the extraordinary similarity between the experimental condition produced and the pathological condition met with in human patients. He emphasized the experience of clinicians that a true diabetic was potentially a severe diabetic, even though his diabetes was mild at a given moment.

It had long been known that diabetes was associated with a change in the pancreas. The gland was found to be atrophic in many cases. Many attempts had been made in the past to determine the physiological effect of the removal of the pancreas. Minkowski and von Mering had been the first to remove the pancreas successfully. The former had found that when a small remnant of the pancreas was left, a mild or irregular diabetes resulted. When these remnants atrophied, severe diabetes was produced. Sandmeyer left a large fragment and ligatured the duct and blood vessels, with the result that atrophy followed and produced a chronic diabetes and emaciation. He noted in a few instances that, notwithstanding the fact that no secretion passed from the gland into the bowel, the diabetes did not develop until the remains of the pancreas had atrophied. It would thus appear that diabetes was not due to a lack of the external secretion of the pancreas. It had, however, been shown that fatal diabetes might result in a dog when a fragment of the pancreas was left in its normal position, but did not atrophy. It occurred to several observers almost simultaneously that the best way to produce a condition similar to human diabetes was to remove a portion of the pancreas, while the blood supply and the normal relations to the bowel were left intact.

It was on these lines that Allen started out on his researches. He removed nine-tenths or more of the pancreas of dogs, and noted that at times diabetes set in acutely. A dog rendered diabetic in this way was starved, and the sugar disappeared from its urine. He then removed seven-eighths or less, and found that the onset was much less acute. At times the glycosuria following this procedure was intermittent. In these cases there was always a tendency toward recovery. Other observers had found that partially depancreatized dogs could be kept free from glycosuria on a meat diet, but when given carbo-hydrates passed sugar in their urine. If the carbo-hydrates were persisted in, these dogs developed severe diabetes and the glycosuria continued, even when the dogs were kept on a meat diet. Allen removed large amounts of the pancreas of dogs, leaving a portion with the blood supply and duct connexions with the intestines undisturbed. These dogs developed severe diabetes, the glycosuria persisting when the dogs were fed on meat exclusively, and even when they were starved. The condition proceeded to a fatal termination. When larger portions of the pancreas were left, the condition was quite different. There was an intermittent glycosuria. On a meat diet there was no glycosuria, and the dog remained well nourished and in good health. When bread was given glycosuria rapidly appeared, but with a

return to the meat diet, the sugar disappeared. On the other hand, when the bread was continued for a long time, the glycosuria did not disappear on the resumption of the meat diet. The dogs showed all the signs of a severe diabetes, and death ensued after a time. Thirdly, when dogs were left with still larger portions of pancreas, the glycosuria was absent with a meat diet, might be absent or intermittent on a diet containing carbo-hydrate, but appeared when a sufficiently large amount of sugar was given. He gave this diet to some of the dogs for a considerable time, and found that the animals continued to excrete dextrose when fed on a diet containing carbo-hydrate (bread). Later the glycosuria might be present, even when the dog was fed on meat. At this stage the dog might be said to be suffering from severe diabetes, and would certainly die.

In a further series Allen left still larger amounts of pancreas. Feeding with sugar then produced only transient glycosuria. The sugar tolerance in these dogs was found to be lower than normal. In all these forms of glycosuria, the development of diabetes could be prevented if the dogs were starved before the glycosuria persisted, when a meat diet was given. Allen had next turned his attention to the treatment of diabetes. He recalled the experience of a spontaneous cure of diabetes without, or even in spite of, treatment. It was known that the sugar might disappear from the urine when the patient developed tuberculosis, or during a fever. Dr. Mills cited the case of a man who had been rejected for life insurance in 1890 because of a long-standing glycosuria. In 1917 the patient was still alive, although he still had severe diabetes, with polyuria, polydipsia and glycosuria. The human patient with diabetes was probably in a better position than Allen's dogs with diabetes caused by partial depancreatization. In the human subject the functional disturbance was probably an important factor in the aetiology of the affection. Allen had shown that when there was very little pancreas left, the dog was not rendered sugar-free by fasting. When the remnant was larger, even though sugar was excreted during a meat diet, a few days' starvation sufficed to reproduce the sugar-freedom. If care were taken in feeding the dog, thus freed from sugar, with meat and fat, it could be kept free from diabetes and in good health, although thin. All attempts to improve the state of nutrition resulted in a return of the glycosuria. A repeated period of fasting sufficed to stop the glycosuria. Allen had found that one-eighth of the pancreas was sufficient for the needs of the dog, provided that the glycosuria was stopped by fasting. If a dog with but one-eighth of its pancreas were fed on carbohydrate long enough to produce diabetes, even with meat diet, starvation would enable it to return to a fair state of health with a low state of nutrition. The nutrition could be increased gradually to some extent, but this could not be driven far.

Allen's treatment of human diabetes was based on the same principles. The first task was to render the patient sugar-free. The second was to keep him sugar-free and under-nourished. The protein as well as the carbohydrates should be watched carefully, and the patient should be given sufficient exercise. He would be kept on a diet of a diminished total caloric value. In his own practice, Dr. Mills had for years attempted to keep his patients free from sugar on a starch-free diet. If the sugar disappeared with this diet after 72 hours, he was satisfied, and he kept the patient on the same diet permanently. If there was still glycosuria, he would endeavour to find out the assimilation limit. He spoke of a youth whom he had had under treatment recently. The boy had been studying hard for an examination. The boy was greatly worried and overworked. He was very ill. The urine was full of sugar. On the third day of fasting the amount of sugar was about 10%, but he was still passing pints and pints of urine and drinking jugs of water. On the sixth day of fasting the urine was free from sugar. He was then given a gradually increasing diet, in accordance with Allen's principles. During the fasting period he was given water, thin chicken broth and coffee; vegetables were then added, and gradually the diet was built up. He was taken at the time of speaking between 1,600 and 1,700 calories, and he was endeavouring to increase this up to 2,000 calories



without a return of the glycosuria. The object of exercise was to get rid of the glucose. Sugar was said to be burned up in muscle by means of the internal secretion of the pancreas. In conclusion, Dr. Mills pointed out that he had agreed to open the discussion on the modern mode of treatment of diabetes at very short notice, because it had been urged on him that there was a risk that the discussion might have to be abandoned for want of speakers. He had attempted to give an account of Allen's work, and impressed on his audience that this work was of great importance. It was founded on scientific research, and was likely to revolutionize their conception of this disastrous disease.

Dr. W. F. Litchfield read the notes of a fatal case of diabetes with hypertrophy of the adrenal gland and fibrosis of the pancreas, together with pronounced arteriosclerosis. (See page 73).

Dr. E. V. Barling stated that Dr. Litchfield had spoken of a case which resembled another he had investigated. The patient had suffered from severe diabetes; she had excreted about 1,500 grammes of sugar in 24 hours and had died of coma. The post-mortem examination had been performed at the Royal Prince Alfred Hospital. The pancreas was in a condition of atrophy or fibrosis. The suprarenals were hypertrophied, and there was definite fibrosis of the kidneys. No arterio-sclerosis was detected in the vessels. Dr. Barling pointed out that if the pathology of diabetes were associated with changes in the endocrine glands, every one of these glands should be examined carefully in every case. The suprarenal bodies, the pituitary body, the ovaries and the testes occasionally acted vicariously. It was stated that the pancreas and the parathyroid gland had opposite action. Pancreatic secretion was supposed to put a break on the production of glucose from glycogen. Dr. Barling exhibited microscopical sections of various organs from the case referred to. The hypertrophy of the suprarenals was seen not to be due to an increase in the medullary part, but to have been caused by an excessive accumulation of lipid matter in the cortex. There was less colloid than normal in the pituitary body. He also described the slight changes met with in the pancreas and ovary. The thyroid was practically normal, and there was definite fibrosis of the kidney.

Dr. J. M. Gill expressed his indebtedness to Dr. Mills for the able manner in which he had reviewed Allen's work. This work had opened a new chapter in their history. The treatment of diabetes was formerly very unsatisfactory. Dr. Gill referred to his limited experience in treating cases by Allen's method. The first patient dealt with in this manner was seen in May, 1916. Since that date, he had treated 17 patients. Two were still under treatment, and three others were also excluded because they had broken off the treatment prematurely. Of the remaining 12, 8 had become free of sugar. The most satisfactory results had been obtained in recent cases. He had found that stout patients tolerated starvation better than thin ones. As a rule, two or three days of starvation were sufficient. It was sometimes difficult to induce patients to submit to starvation, but he had found that when the patients learnt what the result of the treatment was, they usually adopted it. Dr. Gill dealt with the diet given after the period of starvation. He held that it was unnecessary to insist on vegetables being thrice boiled. This entailed a considerable amount of trouble, and vegetables, such as cabbage, became very unpalatable. He gave beans, spinach, cabbage and celery. In regard to milk, he had found that lactose was better tolerated than any other carbo-hydrate. Fish, eggs and cheese came next, and lastly meat. Meat presented more difficulty than other items of diet, but at times it was necessary to give it, especially when from prolonged suppuration carbuncles occurred. He had kept his patients for a considerable time on milk, oatmeal, fresh eggs and vegetables, before admitting other forms of carbo-hydrate to the diet. Toast was much better than bread. In speaking of fruit, he pointed out that the sweet varieties were greatly appreciated. He had found that lævulose was better tolerated than dextrose or glucose. In his experience, if the treatment were successful, it was possible to get the patient back to a normal diet. If meat were given too soon, the sugar would reappear, but it was

possible to rectify this without difficulty. The amount of sugar was always diminished. In the next place Dr. Gill dealt with the complications. As a rule, abscesses, boils and carbuncles healed up; but they spread, if the starvation were driven too far. It was at times necessary to give food in the case of carbuncles. Peripheral neuritis in old-standing cases was, in his opinion, due to malnutrition. These patients stood starvation badly. He had found that cataract had improved under the treatment, and that acidosis was no bar to the treatment. The acidosis frequently disappeared, but he had formed the opinion that it was wise to give some carbo-hydrate when it existed. He preferred milk. He had not had any experience of the treatment of cases complicated by coma or tuberculosis. He had one case with nephritis that was still under treatment. He thought that it was necessary to be cautious when speaking of the results of the treatment of a chronic disease, after the experience of only 12 months. He was, however, much impressed with the prompt way in which the patients got well. He regarded Allen's work as one of considerable importance.

Dr. H. H. Marshall stated that he had treated six cases by Allen's method. It was possible to free the urine from sugar in from two to three days. In the presence of acidosis care should be taken in cutting off the supply of carbo-hydrates at once. On the other hand, there was some danger of its return at a later date, if fats were given too freely. Dr. Marshall dealt with the question of general nutrition, and pointed out that the endeavour should be to keep this as high as possible. In the case of a returned soldier, in whom there was considerable emaciation, he had been successful in removing the glycosuria. The man had put on a stone in weight, and there was a slight return of the sugar. On again reducing the diet, the sugar disappeared. He proposed to repeat the starvation from time to time. He pointed out that diabetes was much more serious in young than in elderly people, and dealt with the disease by distinguishing a pancreatic from a hepatic form. In the hepatic form the disease was not so serious, since the sugar excreted was not a true glucose, but was a form of lævulose.

Dr. J. Morton referred to the association of gout and diabetes. He asked Dr. Mills or the other speakers how they would classify attacks of gout associated with temporary glycosuria.

Dr. H. G. Holmes asked whether the treatment had been successful in the case of children. He spoke of one case in a child in which the treatment had been adopted, although not very rigorously. The child had apparently got well, and had remained well for eleven months.

Dr. A. J. Gibson referred to diabetes in persons over 60 years of age with a large amount of sugar in the urine. He dealt with a particular case, in which starvation had led to fairly satisfactory results.

Dr. J. L. McKelvey asked Dr. Mills whether any observations had been made on the sugar content of the blood during the process of starvation. He also referred to the changes in the kidney met with in diabetes.

Dr. J. E. V. Barling, speaking to Dr. Mills' paper, enquired whether, in his experiments, Allen had dealt with the parathyroid gland. He raised the question of the acceptability of Allen's definition. Allen had thrown the whole blame on the pancreas. A definite lesion of the pancreas had only been found in 25% of persons who had died of diabetes, and whose organs had been examined post mortem. In regard to the burning up of glucose by muscles, he pointed out that a very small amount was dealt with in this way. On the other hand, he maintained that pathologists had not learnt the first letter in the alphabet in regard to the combustion of glycogen.

Dr. W. F. Litchfield spoke of his experience of Allen's treatment in three cases. Before Allen had published the results of his researches, he had adopted the suggestions thrown out by Guelpa, in a boy. The child had remained well for 12 months. He was then taken to another doctor, who put him back on full diet. After a very short time coma developed, and the child died. A fat lady, aged 50 years, had suffered from severe glycosuria and pruritis.

He had put her on a starvation diet, and in two days the urine was free from sugar, and the pruritis was gone. The symptoms did not return during the course of several months. She was then put on a modified diet, with the result that sugar reappeared in the urine. This disappeared after one day's starvation, and had not reappeared. The patient was now having one day's starvation every week. A woman of about 50 years, thin and frail, was also treated by starvation for two days, with the same happy result. The glycosuria returned, but was permanently removed after fasting for one day. He did not think that Allen's theory of diabetes was really antagonistic to the adrenal theory.

Dr. W. H. Crago referred to the clinical experience of diabetes in elderly people being a less serious affection than that in young people. In the latter it was very fatal. On the other hand, he had had experience of patients over 40 years of age who had lived in tolerably good health notwithstanding an undoubted diabetes.

Dr. H. G. Chapman, who had not been present during the discussion, was asked to say a few words on the subject of the treatment of diabetes. He pointed out with considerable emphasis that in treating diabetes there was one instrument of scientific precision which should be employed in every case. This was a pair of scales or balance. It was essential to weigh food before giving it to the patient. With the aid of tables, the physician could estimate with a sufficient degree of accuracy the caloric value of the food which the patient would be allowed to eat.

In his reply, Dr. Mills stated that he wished to take great exception to one or two utterances which had escaped from Dr. Gill. In the first place, there was and could be no difference between toast and bread, save that the latter contained more water. In regard to milk, he pointed out that the carbohydrate content varied between 5% and 6%, and was therefore of small importance as a carbo-hydrate-containing food. In the next place, he disagreed with Dr. Gill entirely that peripheral neuritis was due to malnutrition or starvation. He held that it was a toxic effect. In beri-beri and in alcoholic neuritis the paralysis was caused by a poison, and he held that the same obtained in the peripheral neuritis of diabetes. He regretted that reference had been made to von Noorden's oatmeal treatment. Oatmeal was merely a diet containing carbo-hydrate. Various speakers had referred to acidosis, but he held that very little was known about this condition. In some cases of acidosis, if carbo-hydrate were not given, the patient would get coma and die. In other cases the symptom would pass off as a result of starvation. In reply to Dr. Marshall, he stated that he personally could not distinguish between the pancreatic and the hepatic form. Allen had told them that diabetes was due to the failure of the internal secretion of the pancreas. How this acted was not known. Dr. Mills repeated that, in opening the discussion, he had but attempted to give a summary of Allen's work and of his conclusions. In his limited experience of this treatment, he had found that it worked well in children. He referred to the complicating factor of shock and mental effect. Allen had reported that this held good also for dogs. In one of his animals the glycosuria returned when the animal was taken to the operating room, but was not interfered with. Allen had controlled the sugar content of the blood, but he had no knowledge whether any special attention had been paid to the functional activity of the kidneys. There was no mention in Allen's works of any investigation on the parathyroid. It was held that the patients should not be allowed to lose more weight than was absolutely necessary.

Dr. Litchfield also referred to fright as a predisposing cause, and called attention to the fact that in fright there was said to be an outpouring of adrenalin.

The following have been elected members of the New South Wales Branch:—

James Ian Munro Jamieson, M.B., Ch.M., 1914 (Univ. Sydney), "Roma," Leichhardt Street, Waverley.

Harold William Cuthbert, M.B., 1917. (Univ. Sydney), "Burnleigh," Carabella Street, Kirribilli Point.

## Naval and Military.

We regret to note that the 324th casualty list contains the name of Captain Leo Raphael Kenihan, who was wounded, and remained on duty. No names of medical men appear in the 325th and 326th casualty lists.

The following military honours are announced:—

Military Crosses have been awarded to Captain Charles Herbert Léedman and Captain Cyril Charles Minty for fearlessness in attending wounded under shell fire.

The names of the following officers who have rendered valuable services have been entered in records of service:—

Major Thomas Ernest Victor Hurley.

Major Donald Stuart Mackenzie.

Major Douglas Murray McWhae.

In the *Commonwealth of Australia Gazette*, No. 113, of July 19, 1917, the following record of appointments, etc., is published:—

### Appointments.

#### 2nd Military District.

##### Australian Army Medical Corps Reserve—

Lieutenant-Colonel (Honorary Colonel) R. E. Roth, D.S.O., V.D., is to be President, Permanent Medical Referee Board, with pay consolidated at rate of £685 per annum. Dated 8th May, 1917.

Honorary Captain C. Retallack, from Australian Army Medical Corps Reserve, is to be a member of the Permanent Medical Referee Board, with pay consolidated at rate of £410 per annum. Dated 8th May, 1917.

#### 3rd Military District.

##### Australian Army Medical Corps—

Lieutenant-Colonel (Honorary Colonel) A. H. Sturdee, C.M.G., V.D., is to be President, Permanent Medical Referee Board, with pay consolidated at rate of £685 per annum. Dated 1st May, 1917.

Honorary Captain (Temporary Major) G. G. Nicol, from appointment as Senior Medical Officer, Australian Imperial Force, Camp, is to be a member of the Permanent Medical Referee Board, with pay consolidated at £550 per annum. Dated 1st May, 1917.

#### 6th Military District.

##### Australian Army Medical Corps—

Major (Honorary Lieutenant-Colonel) J. A. Newell is to be Officer Commanding No. 12 Australian General Hospital, and President, Permanent Medical Referee Board, Launceston, with pay at rate of £290 per annum (part-time). Dated 14th June, 1917.

The temporary appointment of Captain (Temporary Major) C. G. Thompson, as Officer Commanding No. 12 Australian General Hospital, is terminated. Dated 13th June, 1917.

### Promotions.

#### 1st Military District.

##### Australian Army Medical Corps Reserve—

Honorary Captain C. L. Thompson is to be Honorary Major. Dated 1st July, 1917.

Honorary Lieutenants T. D. England, A. B. Walker, A. R. Menzies, W. R. Parker, and A. E. Gibson are to be Honorary Captains. Dated 1st July, 1917.

#### 2nd Military District.

##### Australian Army Medical Corps Reserve—

Honorary Lieutenants F. Marshall, E. V. Hawkins, R. H. B. Moxham, A. Douglass, M. S. Atwill, B. R. Jones, H. G. Hardie, H. O. Watson, F. R. Forster, P. A. Ash, R. H. Green, G. K. Satchell, C. L. Harvey, F. I. Ferris, and O. J. McDermott are to be Honorary Captains. Dated 1st July, 1917.

#### 3rd Military District.

##### Australian Army Medical Corps Reserve—

Honorary Lieutenants J. Polack, E. R. Reeve, A. R. S. Wellman, W. J. Tuckfield, E. S. Fischer,

C. H. Down, J. A. Natrass, F. S. Parrett, G. Finlay, A. M. Cox, H. E. Stevens, O. Behrend, E. J. Wise, K. Russell, and C. E. Allen are to be Honorary Captains. Dated 1st July, 1917.

#### 4th Military District.

Australian Army Medical Corps Reserve—

Honorary Captain H. G. Williams is to be Honorary Major. Dated 1st July, 1917.

Honorary Lieutenants L. B. Day, F. M. Bradshaw, W. A. Harrop, A. I. Chapman, R. Goodson, and P. Desmazures are to be Honorary Captains. Dated 1st July, 1917.

#### 5th Military District.

Australian Army Medical Corps Reserve—

Honorary Lieutenants C. H. Terry, G. T. Donovan, H. R. Day, R. G. Braham, and J. F. Mitchell are to be Honorary Captains. Dated 1st July, 1917.

#### 6th Military District.

Australian Army Medical Corps Reserve—

Honorary Lieutenants C. G. Harris, J. Graham, W. J. Patterson, D. P. Lucadou-Wells, and R. G. Sharp are to be Honorary Captains. Dated 1st July, 1917.

## Correspondence.

### NATIONALIZATION OF THE MEDICAL PROFESSION.

Sir,—I have heard the statement made that in the event of the nationalization of medicine the medical men in the public service, and especially those in the Lunacy Department, will prevent the profession receiving a fair deal, because the future incomes of medical men will be calculated on the basis of the salaries at present accepted by these public servants. It is therefore to the interests of the profession in general to insist on salaries paid to medical men in the public service being of a higher rate than those of clerks. The worst service of all—the Lunacy Department—pays the medical officers (excluding the superintendents) a little higher than the junior clerks and less than the chief clerk. The medical officers are numerically few in numbers, so they have no chance of anybody taking up their case, and their only alternative, if they don't like it, is to get out. The result would be that their places would be filled by "pot-boilers," who stay a few months, till they have saved a little money, and then clear out. This is grossly unfair to the progress of the study of psychiatry, and also is not fair to the patients, as it takes several years to become proficient in the treatment of the insane. There are certain medical men who wish to make insanity their specialty, and in order to do this they have to put up with the small salary—commencing with £300 a year and allowances. There are other medical men who cannot do private practice—perhaps an invalid wife or some other trouble—and these men find they can earn their bread and butter best in a fixed position. They therefore have to accept a small salary, with slow promotion and poor rises. A junior medical officer's salary has a maximum of £432, minus £60 for allowances, and he may be for seven years before he becomes a senior medical officer, whose maximum, after twelve years' service, is only £502, minus £72 for allowances. The work is very arduous, and carries a lot of responsibility; but the part that hurts most is being paid less than the clerk. Has any medical public servant any comments to make on this letter?

Yours, etc.,

"EQUITY."

Victoria, July 16, 1917.

### SAFEGUARDING THE PRACTICES OF MEN ON ACTIVE SERVICE.

Sir,—You were kind enough to publish in the *Journal* of July 14, 1917, my letter with reference to encroachments on the practices of men serving with the A.I.F. It has drawn no reply or comments. The subject is, no doubt, of little interest to any but those affected. From the *British Medical*

*Journal* just received I have cut the following, which shows how such cases can be handled:—

"The Irish Medical War Committee, in addition to transacting the usual routine business, considered the case of a doctor who availed himself of the absence of a colleague, who had joined the R.A.M.C., to settle down and practise in his district, thus interfering with the private arrangements made to safeguard the interests of the doctor who was serving with the R.A.M.C. The Committee passed a strong resolution disapproving of the action of the doctor in question, and directed the Secretary to write to him to this effect, and to inform him if he persisted in his present position the Irish Medical War Committee would report his conduct to the General Medical Council."

Will you kindly inform me whether there is in New South Wales or in Australia a body corresponding in its functions to the Irish Medical War Committee?

Yours, etc.,

"INQUIRER."

Sydney (undated).

[No body with the powers of the Irish Medical War Committee exists in New South Wales or in Australia.]

### AN ALLEGED INVENTION.

Sir,—The medical profession of Australia will, no doubt, be interested to read the following extract, taken from the *American Journal of Roentgenology* of June, 1917:—

"Our readers will recall an editorial in this *Journal* for November, 1916, signed by Dr. E. W. Caldwell, calling attention to the "alleged invention" of a man named Shearer, who, at the time, was a member of the British Army Medical Corps. He was supposed to be an American, a graduate of a medical school in Washington, D.C. He claimed to have devised a new electrical method for the delineation of internal viscera.

From a physician serving with the allied armies who has had abundant opportunity to investigate the facts, we learn that this man was finally pronounced a fraud, and that he is at the present time serving a term of imprisonment for fraud. Dr. Caldwell's estimate of the invention seems to have been justified by later developments."

Yours, etc.,

HERSCHEL HARRIS.

215 Macquarie Street, Sydney,  
July 20, 1917.

### CONSULTANT PATHOLOGISTS.

Sir,—Dr. Finckh's letter *re* "consultant pathologists" in last week's issue is hardly in harmony with a paragraph which appeared in the *Journal* last year stating his intention to practise as a consultant in addition to his pathological work. Advertisements to this effect appeared in the daily press.

Yours, etc.,

P. E. WALTON SMITH.

"Beanbah," 235 Macquarie Street,  
Sydney, July 17, 1917.

[In the issue of July 14, 1917, we published a note to the effect that Dr. A. E. Finckh had announced his intention to practice as a consultant, in addition to carrying out pathological work in his laboratory. We interpret this to mean that he would not undertake the immediate care of patients otherwise than on behalf of, or in collaboration with, other practitioners. A practitioner who attends patients on his own behalf cannot with justification claim to be a consultant. We do not agree with Dr. Walton Smith that there is any incongruity between the two statements.]

### FREE ATTENDANCE ON SCHOOL CHILDREN.

Sir,—Dr. Arthur's letter, for which he deserves the warm thanks of the profession, is incontrovertible. I join him in urging that a special meeting of the profession be called upon to decide whether the principle endorsed by three Australasian Congresses, that the hospitals are for the



poor and not for the rich, should not be frankly stated and firmly upheld. In an official interview with the Hon. Secretary of the Sydney Hospital medical staff (Dr. Ritchie), Dr. Willis said he was determined not to allow any inquiry into the financial circumstances of the parents of the children attending the hospital clinics for school children, so the profession knows exactly what is intended and what the inevitable effect must be on the immediate and future prospects of the medical profession.

In venereal diseases there is far more excuse for ignoring good financial position in sufferers from these diseases who attend hospital clinics; it is all the more gratifying to find recorded in the *Journal* that the profession in Victoria has succeeded in having incorporated in the Government regulations for the treatment of venereal diseases that the hospitals are only called upon to treat patients "whose financial circumstances are such that they are unable to pay the ordinary fees charged by medical men."

Cannot New South Wales be equally wise and just?

Yours, etc.,  
Sydney (undated). RALPH WORRALL.

### Medical Appointments.

Dr. Charles Thomas Abbott has been appointed Public Vaccinator for the North-Western District, Victoria, in place of the late Dr. Arthur E. B. Forster.

Dr. David Crombie has resigned his position as Public Vaccinator for the South-Western District, Victoria, and Dr. George William Damman has been appointed in his stead.

During the absence of the Medical Superintendent, Dr. Pender Smith has been appointed Acting Medical Superintendent, Hospital for the Insane, Ipswich, Queensland, Dr. Ernest Charles Jennings having resigned. The appointment dates from June 1.

Dr. Harry W. Wunderly has been appointed Officer of Health for the District of Nairne, South Australia.

The resignation of Dr. O. Arnold as Resident Medical Officer of the Fremantle Public Hospital has been accepted.

The appointment of Dr. F. E. Juttner as Medical Officer to the District Council, South Australia, is announced in *The South Australian Government Gazette* of July 19, 1917.

### Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xvii.

Richmond District Hospital, Medical Officer.

### Medical Appointments.

#### IMPORTANT NOTICE

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
<b>TASMANIA.</b> (Hon. Sec., Belterive, Tasmania.)	Medical Officers in all State-aided Hospitals in Tasmania.
<b>VICTORIA.</b> (Hon. Sec., Medical Society Hall, East Melbourne.)	Brunswick Medical Institute. Bendigo Medical Institute. Prahran United F.S. Dispensary. Australian Prudential Association Proprietary, Limited. National Provident Association. Life Insurance Company of Australia, Limited. Mutual National Provident Club.

Branch.	APPOINTMENTS
<b>QUEENSLAND.</b> (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Medical Officers to the Selwyn Hospital, North Queensland. Brisbane United Friendly Society Institute. Warwick Hospital.
<b>SOUTH AUSTRALIA.</b> (Hon. Sec., 3 North Terrace, Adelaide.)	The F.S. Medical Assoc., Incorp., Adelaide.
<b>WESTERN AUSTRALIA.</b> (Hon. Sec., Health Department, Perth.)	All Contract Practice Appointments in Western Australia.
<b>NEW SOUTH WALES.</b> (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmmain United F.S. Dispensary. Canterbury United F.S. Dispensary. Leichhardt and Petersham Dispensary. M.U. Oddfellows' Med. Inst., Elizabeth Street, Sydney. Marrickville United F.S. Dispensary. N.S.W. Ambulance Association and Transport Brigade. North Sydney United F.S. People's Prudential Benefit Society. Phoenix Mutual Provident Society. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Parramatta, Penrith, Auburn and Lidcombe. Newcastle Collieries — Killingworth, Seaham Nos. 1 and 2, West Wallsend.
<b>NEW ZEALAND: WELLINGTON DIVISION.</b> (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, N.Z.

### Diary for the Month.

- July 31.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.  
 Aug. 1.—Vic. Branch, B.M.A., Branch.  
 Aug. 3.—Q. Branch, B.M.A., Branch.  
 Aug. 9.—Vic. Branch, B.M.A., Council.  
 Aug. 10.—N.S.W. Branch, B.M.A., Clinical.  
 Aug. 10.—S. Aust. Branch, B.M.A., Council.  
 Aug. 14.—Tas. Branch, B.M.A., Council and Branch.  
 Aug. 14.—N.S.W. Branch, B.M.A., Ethics Committee.  
 Aug. 15.—W. Aust. Branch, B.M.A., Branch.  
 Aug. 15.—Western Suburbs Med. Assoc. (N.S.W.).  
 Aug. 16.—North Eastern Med. Assoc. (N.S.W.).  
 Aug. 16.—City Med. Assoc. (N.S.W.).  
 Aug. 21.—N.S.W. Branch, B.M.A., Executive and Finance Committee.  
 Aug. 24.—Q. Branch, B.M.A., Council.  
 Aug. 28.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.

#### EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.  
 Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.  
 All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.